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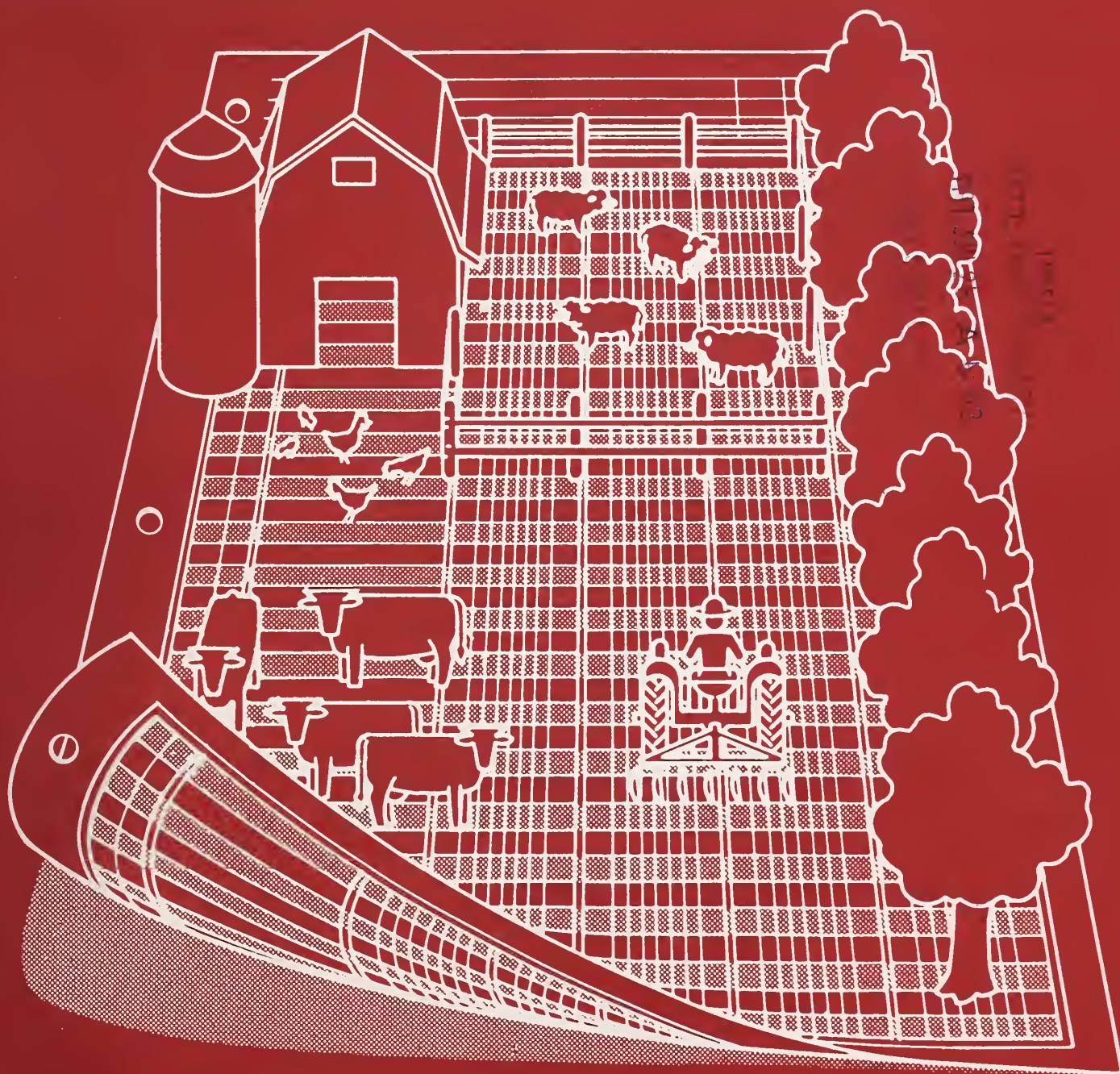
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Economic Indicators of the Farm Sector

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Costs of Production, 1987



PREFACE

Costs of Production is one of five reports in the annual *Economic Indicators of the Farm Sector* series; others are the *National Financial Summary*, *State Financial Summary*, *Production and Efficiency Statistics*, and *Farm Sector Review*.

This issue of *Costs of Production* contains enterprise cost estimates for 1985, 1986, and 1987. The 1987 estimates are preliminary and the 1986 estimates have been updated from the 1986 issue. Some 1985 estimates also have been revised.

Besides current data on prices and production, new data on production technology, based on the 1986 Farm Costs and Returns Survey (FCRS), for grain sorghum, wheat, soybeans, and sunflowers are included in this issue. We have discontinued cost estimates for different classes of wheat, redefined the wheat production regions, and classified wheat categories under one label, all wheat. We combined soybean estimates in the Northern Plains with the Lake States and Corn Belt to form the North-Central region. Discontinued are grain sorghum estimates for the Southwest (California).

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Economic Indicators of the Farm Sector

COSTS OF PRODUCTION, 1987

1987 PRODUCTION COSTS AND RETURNS

The U.S. Congress requires the U.S. Department of Agriculture's Economic Research Service (ERS) to estimate annual costs of producing wheat, feed grains, cotton, and dairy commodities. ERS also determines costs for other farm products which compete with the required commodities, namely rice, peanuts, soybeans, flax, sunflowers, fed cattle, hogs, sheep, and sugar.

This report presents national and regional estimates of commodity production costs and returns. The estimates are in the form of an enterprise budget that is divided into three sections: gross value of production, cash expenses, and economic costs. The budgets are based on weighted-average estimates of all costs associated with a particular enterprise. *Payments for and costs of participation in Government programs are not included except as discussed later.* This is because most programs are voluntary, and adequate data do not exist to estimate the cost of complying with the program.

Costs of production for most crop and livestock enterprises increased slightly in 1987. Increases in production costs exceeded 5 percent for only corn, soybean, cotton, and cow-calf enterprises. Costs for sugarcane, flax, and feeder pigs fell slightly. Milk production costs per cow increased 1 percent, while costs per unit of milk fell 3 percent.

Returns increased for all enterprises, except peanuts, sugarcane, sunflowers, and flax. For all other commodities, values of production increased more than production costs. Cotton returns rose the most as yield per acre jumped nearly 50 percent. Higher beef prices more than offset increased cattle costs of production.

Producers generally paid slightly higher prices for inputs in 1987. After falling during the previous 2 years, the Index of Prices Paid for Production Items,

Interest, Taxes and Wage Rates (*Agricultural Prices, 1987 Summary*) increased 1 percent between 1986 and 1987. Indexes for certain production items changed as follows:

<u>Input</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	<u>Percent</u>		
Farm origin:			
Feed	-14.5	-6.7	-5.1
Feeder livestock	0	-.7	17.0
Nonfarm origin:			
Wage rates	2.0	3.9	4.4
Interest payments	-7.8	-7.6	-5.5
Taxes	.8	.8	1.5
Buildings	-1.4	0	.7
Autos and trucks	6.0	2.6	5.1
Tractors	-1.7	-2.2	0
Other machinery	1.7	-.5	1.6
Farm supplies	-.7	-1.4	0
Fuels	0	-19.4	-.6
Farm chemicals	0	-.8	-2.4
Seed	1.3	-3.3	0
Fertilizer	-5.6	-8.1	-4.8

Changes in enterprise expenses for production items generally followed the indexes. Fertilizer expenses fell for nearly every enterprise. Seed expenses fell slightly for wheat and rice and rose for oats, soybeans, and peanuts. Chemical expenses were down slightly for most crops. Fuel expenses for most enterprises increased, while the fuels and energy index decreased slightly. Fuel expenses in 1987 fell slightly from 1986 levels. Feed grain expenses for livestock enterprises declined in 1987, while protein supplement expenses rose. Feeder cattle and feeder hog expenses increased substantially.

Despite the increases in costs of production, total production expenditures in the farm sector fell in 1987. Acreage planted to principal crops was down about 7 percent to about 305 million acres. Of the major crops, only cotton, sugar beets, and oats showed increased planted acreage in 1987. Harvested acreage of sugarcane increased. Beef, lamb, and

mutton production declined, while pork production increased.

Corn--Cash costs of production rose 4 percent to \$176 per acre. Total variable cash expenses fell 1 percent. Fertilizer expenses declined 6 percent, about \$2.50 per acre, and fuel, lubrication, and electricity expenses increased 13 percent, about \$1.50 per acre. Fixed cash expenses, primarily general farm overhead and interest payments on real estate, rose 17 percent to \$56 per acre. Total economic costs--cash expenses less interest plus imputed returns to capital, land, and unpaid labor--rose 6 percent to \$252 per acre. Despite the rise in costs, residual returns to management and risk increased for the first time since 1983 as corn yield reached a record high in 1987.

Among the corn regions, total economic costs per acre ranged from \$211 in the Southeast to \$297 in the Southwest. Costs in the Lake States and Corn Belt, which contain about two-thirds of U.S. corn production, were \$254 per acre. Returns to management and risk were most favorable in the Northern Plains and the Lake States and Corn Belt, at minus \$46 and minus \$50 per acre. In the Southwest, where yield was at about the same level as in the Northern Plains and the Lake States and Corn Belt, the return was minus \$60, because of additional expenses for irrigation. In the Southeast, the region of the lowest per-acre costs, yield below the U.S. average resulted in a minus \$68 return per acre. Northeast returns were minus \$81 per acre.

Grain sorghum--Costs of production changed little. While fertilizer expenses fell 13 percent, \$2.26 per acre, fuel expenses rose 16 percent, \$1.47 per acre; total variable cash expenses fell just 2 percent to \$55 per acre. Total cash expenses were unchanged between 1986 and 1987. Total economic costs per acre increased about \$2. Returns to management and risk improved 8 percent to minus \$39 per acre, the result of modest increases in price and yield.

Cash costs per acre in the two sorghum regions were nearly identical. The Southern Plains had higher total variable cash expenses because of higher custom operations and irrigation expenses, while the Central Plains had higher total fixed cash expenses. Total economic costs were higher in the Southern Plains, \$140 per acre, than the \$133 per acre on the Central Plains, where yields were higher.

Barley--Cash production costs for barley rose slightly. General farm overhead and interest on real estate accounted for most of the increase. Variable cash expenses fell \$2 per acre to \$48, and fixed expenses

rose \$4 per acre to \$29. Returns to management and risk improved from minus \$47 per acre to minus \$40.

Barley costs were highest in the Northeast. Variable cash expenses were \$68 per acre, and fixed cash expenses were \$60 per acre. Economic costs totaled \$188 per acre, up from \$182 in 1986. Residual returns to management and risk were virtually unchanged.

The Northern Plains continued to have the lowest production costs: total cash expenses were \$65 per acre. This region was further aided by a 25-percent increase in the price of barley. Returns to management and risk improved 17 percent to minus \$40 per acre.

Gross value of production, 18 percent more than in 1986, was highest in the Northwest. Cash expenses were \$114 per acre, leaving a \$28-per-acre net return before capital replacement, highest of the barley regions. Returns to management and risk improved to minus \$24 per acre, also highest among the barley regions.

Southern Plains and Southwest barley had high custom operations and irrigation-related costs. The Southern Plains' cash expenses were \$107 per acre, and economic costs were \$152. The value of production in the Southern Plains increased 28 percent to \$120 per acre and the returns to management and risk improved to minus \$32 per acre. Southwest cash expenses were \$127 per acre, and economic costs were \$171 per acre. This region's value of production fell 24 percent and returns to risk and management declined to minus \$85 per acre, worst among the regions.

Oats--Cash costs of production climbed. Increased expenses for fuel, lubrication, and electricity moved variable cash expenses up about 5 percent. Fixed cash expenses also increased. Residual returns to management and risk improved 40 percent, however, as a result of more than a 50-percent increase in the price of oats. Yield per acre planted for grain fell slightly to 55 bushels.

Of the three oats production regions, the Northern Plains continued to have the lowest costs of production and the most favorable returns to management and risk. Variable expenses in the Northern Plains, particularly fertilizer and fuel expenses, were well below the U.S. average. In the Lake States and Corn Belt, the region producing the most oats, the returns to management and risk

showed their greatest improvement, up 45 percent to minus \$31 per acre.

Wheat--Production increased slightly to 2.1 billion bushels, although harvested acreage declined to its lowest level since 1973. The value of wheat production increased \$10 per planted acre to \$78 due to higher yields and harvest-month prices. U.S. average yield was up 2.9 bushels to 31.6 bushels per planted acre; the harvest-month price for wheat was up 9 cents per bushel to \$2.39. Expenses for fuel and lubrication, repairs, general farm overhead, taxes and insurance, and interest on real estate increased, while expenses for purchased irrigation water were unchanged and other expenses declined. As a result, total cash expenses remained the same as in 1986: \$68 per acre. Net cash returns before capital replacement were \$10, not enough to cover capital replacement. Returns to management and risk improved \$7 to minus \$37 per acre.

Yields increased significantly in the North-Central and Northwest regions. Wheat yields varied from 16.5 bushels in the Southern Plains to 72.9 bushels in the irrigated Southwest. Harvest-month prices ranged from \$2.26 per bushel in the Central Plains to \$2.77 in the Southwest. The Southern Plains had the lowest gross value of production, \$38, and the Southwest had the highest, \$202. Total cash expenses varied greatly among regions, ranging from \$57 in the Southern Plains to \$179 in the Southwest. The Southern Plains had the lowest net land returns, \$14 per acre, while the Southwest had the highest, \$93 per acre.

Net cash returns, value of production less total cash expenses, were positive in all regions except the Southern Plains where cash expenses exceeded gross value of production by \$19 per acre. Net cash returns after capital replacement were positive only in the Northeast, North-Central, and Northwest regions. Returns to management and risk ranged from minus \$16 in the Northeast to minus \$101 in the Southwest.

Rice--Cash costs of production for U.S. rice fell slightly to \$311 per acre. Increases in expenses for fuel, lubrication, and electricity, purchased water, technical services, and hired labor were offset by drops in all other cash expense items. Fertilizer expenses fell the most, \$5.17 per acre. While cash costs fell, total economic costs of production rose \$5 to \$413 per acre in 1987. As a result of a 26-percent increase in the harvest-month market price of rice, residual returns to management and risk improved 21 percent to minus \$149 per acre.

The Arkansas and Delta regions continued to have lower costs and more favorable returns to management and risk per acre than the California and Gulf Coast regions. Total variable cash expenses at \$211 and \$234 per acre in Arkansas and the Delta, respectively, were 28 and 20 percent less than the \$294 in California and the Gulf Coast. Costs per hundredweight in California were similar to those in Arkansas and the Delta.

Soybeans--Costs of soybean production increased: variable cash expenses climbed 6 percent to \$52 per acre; fixed cash expenses increased 11 percent to \$44 per acre; and total economic costs rose 6 percent to \$169 per acre. Despite the increase in costs, residual returns to management and risk improved from minus \$9 per acre in 1986 to plus \$4 per acre in 1987 as a result of an 11-percent increase in the price of soybeans.

Total cash expenses per planted acre continued to be lowest in the Southeast and Delta regions. General farm overhead, taxes and insurance, and interest paid on real estate were much lower in the two southern regions. Yield in the North-Central region was greater, and per-bushel costs were lowest. Residual returns to management and risk were also most favorable in the North-Central region.

Sunflowers--Costs of production changed little. Total economic costs moved up \$1 to \$115 per acre; total variable expenses fell less than \$1 per acre; total cash expenses rose about \$3 to \$73 per acre. While yield improved, the price of sunflowers fell, and returns to management and risk fell from minus \$16 to minus \$17 per acre.

Peanuts--Yield per planted acre was down 3 percent to 2,281 pounds. Total production was 3.59 billion pounds. The harvest-month price of peanuts fell a penny to 27 cents per pound. Gross value of production declined an average \$46 per acre to \$631, mainly due to the decline in yields. Variable cash expenses increased \$17 to \$303 per acre. Seeds and chemicals were the major cash expense items. Together, they accounted for 56 percent of total variable cash expenses. Seed costs were up 26 percent, while chemical expenses fell 3 percent. Fixed expenses were down from \$130 to \$99. Total economic costs increased slightly to \$508, leaving \$124 in residual returns to management and risk.

Among the regions, the Southern Plains had the lowest cash expenses and the lowest yield, resulting in the lowest net cash returns, \$175 per acre. All three regions had strong positive residual returns to

management and risk, ranging from \$56 in the Southern Plains to \$160 in Virginia and North Carolina.

Flaxseed--Production was down 35 percent to 7.44 million bushels, mainly due to a reduction in acreage. Flax yields averaged 15.8 bushels per planted acre. Harvest-month price per bushel continued to decline from \$5.46 in 1985 and \$3.67 in 1986 to \$3.15 in 1987. This caused the gross value of production to fall from \$64 per acre in 1986 to \$56 in 1987. Cash expenses in 1987, \$48 per acre, were nearly the same as in 1986. Net returns before capital replacement were positive but not enough to cover capital replacement and other economic costs, leaving residual returns to risk and management at minus \$35.

Cotton--Increases in U.S. cotton costs of production were more than offset by large gains in cotton prices and yield. Cotton lint yield grew by 49 percent; prices climbed 27 percent. Residual returns to management and risk improved more than 170 percent from minus \$79 per acre in 1986 to plus \$56 per acre in 1987. Increased yield drove up expenses for ginning, which, with greater fuel expenses, pushed up variable cash expenses by 19 percent to \$250 per acre. Fixed cash expenses, chiefly interest paid, also increased from \$59 in 1986 to \$99 in 1987. Total cash expenses were up 29 percent. Total economic costs of cotton production were \$430 per acre, an increase of 26 percent.

The Southern Plains--Texas, New Mexico, and Oklahoma--continued as the region with the lowest total economic costs: \$289 per acre. Yields in the region, which contains more than half of the U.S. cotton acreage, increased 86 percent. As a result, ginning expenses increased from \$26 to \$51 and the land return (based in part on the value of production) more than doubled to \$58 per acre. Total cash costs increased 39 percent to \$210 per acre. Despite increased costs, residual returns to management and risk improved by 153 percent to \$35 per acre in the Southern Plains.

Southeast yields increased 25 percent, and residual returns to management and risk improved to minus \$18 per acre. Total economic costs per acre were \$431. Delta yields increased 39 percent. Total economic costs increased to \$444 per acre. Returns to management and risk, at \$99 per acre, were more favorable in the Delta than other regions. In the Southwest--California and Arizona--where all cotton is irrigated, yield increased 13 percent to 1,262 pounds per acre, 86 percent above the U.S. average. Costs in

the Southwest were high. Total variable expenses, which included \$131 per acre for ginning, were \$536 per acre, more than double the U.S. average. Total economic costs, which increased by 13 percent, were \$879 per acre in the Southwest.

Sugar beets--U.S. harvested acreage increased 5 percent and net tons per planted acre increased 8 percent, resulting in a 14-percent increase in production. Per-acre gross value of production for the 1987 crop averaged \$828, an increase of 13 percent. Per-acre variable costs averaged \$275 and fixed expenses \$149 for a 3-percent increase in total cash expenses. Costs for all variable expense inputs increased in 1987 except for fertilizer and chemicals, which declined, and fuel and miscellaneous, which were unchanged. Hired labor, chemicals, fertilizer, and fuel and lubrication were the largest variable cost components. The returns to management and risk increased to \$236, an increase of \$79 per planted acre.

Sugarcane--U.S. acreage harvested for sugar production increased almost 4 percent. Variable costs per harvested acre, at \$627, fell 4 percent. Estimated costs declined for all variable inputs except seed and purchased irrigation water. Hired labor accounted for almost 53 percent of variable costs followed by repairs, at 16 percent. Residual returns to management and risk declined between crop years 1986 and 1987 to minus \$19 per harvested acre. Even though raw sugar prices increased slightly, an average yield loss of 7 percent reduced gross value of production an estimated 4 percent to \$1,026 per harvested acre.

Fed beef--Higher cattle prices coupled with lower grain prices improved returns to fed-beef production. Gross value of production increased from \$58.14 per hundredweight (cwt) in 1986 to \$65.36 in 1987. Cash expenses for grain fell from \$8.10 to \$6.46. Net cash returns, value of production less total cash expenses, improved from minus 55 cents in 1986 to plus \$4.69 per cwt in 1987, and residual returns to management and risk improved from minus \$1.88 to plus \$3.62 per cwt.

Returns to farmer feedlots continued to improve. Net cash returns were \$4.09 per cwt. Yet, for the eighth consecutive year, value of production failed to cover total cash expenses plus capital replacement. For commercial feedlots, those with capacity greater than 1,000 head, net cash returns were \$5.30 per cwt and value of production was \$4.66 greater than cash expenses plus capital replacement, an improvement from minus \$1.71 per cwt in 1986.

Cow-calf--Returns to cow-calf production improved primarily because of higher cattle prices. Although total cash expenses increased, net cash returns improved from minus \$46.79 per cow in 1986 to minus \$18.48 in 1987. Gross value of production increased from \$265.47 to \$312.94.

Cow-calf production costs varied by size of operation. The difference between value of production and cash expenses plus capital replacement ranged from \$55.76 per head for operations with more than 500 cows to minus \$52.16 per head for operations with fewer than 100 cows. Operations with 100-500 cows had returns of \$15.15 per cow. Most of the variation in cost by size of operation was attributed to the fixed cash expenses of the operations. For operations with fewer than 100 head, fixed cash expenses accounted for almost 40 percent of total cash expenses per cow; for operations with between 100 and 500 head, fixed cash expenses were 27 percent of total cash expenses; for operations with more than 500 head, fixed cash expenses were 19 percent of the total.

In the South, where operations are somewhat smaller than the national average, the difference between value of production and cash expenses plus capital replacement was less favorable than in other regions. The difference in the South was minus \$86.36 per cow, and in the West, it was plus \$36.01 per cow.

Hogs--Returns to hog production continued to improve. Improved margins for slaughter hogs increased the bidding pressure for feeder pigs, resulting in higher feeder pig prices. These higher prices for feeder pigs resulted in an increase in the difference between value of production and cash expenses plus capital replacement from \$11.42 per cwt in 1986 to \$19.33 in 1987. Back-to-back years of positive returns in 1986 and 1987 followed 3 years of negative returns to feeder pig production.

Returns to feeder pig production varied extensively depending on the size of the operation. Net cash returns for operators producing 300 pigs annually were \$27.64 per cwt, compared with \$38.72 per cwt for operations producing 3,000 pigs per year.

Economies of size in feeder pig production influence the relative returns across regions. The Southeast's typical operation was somewhat larger, and net returns averaged \$20.74 per cwt. The North-Central region showed average net returns of \$19.19 per cwt.

Higher feeder pig prices contributed to a drop in returns to feeder pig finishing. The difference between the value of production and cash expenses

plus capital replacement was 99 cents per cwt, down from \$2.32 in 1986 but above the 1985 level, minus \$5.57. Lower grain prices in the North-Central region led to more favorable returns to feeder pig finishing in this region than in the Southeast.

Farrow-to-finish hog producers benefited from lower grain prices and higher market hog prices. Gross value of production increased from \$50.25 in 1986 to \$51.30 in 1987. Total cash expenses plus capital replacement were \$10.34 per cwt in 1987, up from \$9.20 per cwt in 1986. Total feed costs as a percentage of total variable cash expenses declined from 80 percent in 1985 to 77 percent in 1986 to 76 percent in 1987. Grain costs have declined most, by 36 percent, since 1985.

The North-Central region continued to show better returns than the Southeast. Value of production was \$10.83 per cwt greater than cash expenses plus capital replacement in the North-Central region, and \$6.63 greater in the Southeast. Total feed costs in the North-Central region were about 17 percent below those in the Southeast.

Sheep--Higher lamb prices and lower grain prices boosted returns for sheep producers. Value of production less cash expenses and replacement advanced to \$20.60 per ewe from \$16.36. Value of production less variable cash expenses increased from \$38.69 to \$44.46 per ewe in 1987.

Milk--Cash costs per cow fell slightly in 1987 with variable cash costs averaging 1.2 percent below 1986 levels. Feed costs fell slightly to 48 percent of the total cash costs. Expenses per cow for forages were essentially the same as the year before while expenses or concentrates dropped slightly. Total feed costs were about \$15 per cow lower in 1987 than in 1986.

Increased milk output per cow led to a more than 4-percent drop in total cash costs per unit of milk between 1986 and 1987. The feed costs per unit of milk declined over 6 percent, 32 cents per cwt. Fixed costs and capital replacement increased slightly per cow but decreased slightly per cwt of milk.

Although total cash costs per cow were relatively level from 1986 to 1987, increases in the average milk price and the value of cull and dairy stock resulted in 59 percent higher cash returns (gross value of production less cash expenses and capital replacement). The 47-percent drop in total cash costs per unit of milk sold, accompanied by an increase in the value of production, resulted in a 72-cent per cwt increase in cash returns.

Total economic costs per cow increased. While total economic costs per cwt of milk declined, the drop was smaller than the fall in total cash costs per cwt because of a rise in the imputed return to nonland capital.

Residual returns to management and risk increased 44 percent per unit of milk in 1987 to reach their highest level during 1985-87. Returns in 1986 were low due to a relatively low milk price, \$12.47 per cwt, and the 36-cent per cwt Government dairy assessment.

Dairy costs in the Appalachian region reflected the overall U.S. pattern. During 1986-87, costs declined, the value of production increased, and returns improved. The Appalachian region had the lowest cash costs per cow primarily because of low nonfeed variable costs. The value of milk sold per cwt in Appalachia was third highest among the regions while the level of milk production, 12,689 pounds per cow, was the second lowest. Total economic costs per cwt of milk in Appalachia were lower than in every region except the Pacific.

Milk production in the Corn Belt showed the lowest returns of any region. Fixed cash costs and capital replacement in the Corn Belt were relatively high, reflecting a high proportion of homegrown forage. The Corn Belt had the second highest total economic costs per unit of milk.

Variable cash costs per cow for milk production increased in the Northeast mainly due to increases in milk hauling and marketing, hired labor, and concentrate costs. The Northeast was the only region showing increased total costs. While costs increased in the Northeast, the value of milk production also increased, 15 cents per cwt in 1987, leading to improved returns. Milk production per cow was second highest in the Northeast.

Milk production per cow was highest in the Pacific region, 16,821 pounds in 1987. Costs per unit of milk were the lowest, although cash costs per cow were the highest of all the dairy regions. Even though the Pacific was the lowest cost region, the residual returns per cwt of milk in the Pacific ranked fourth among the seven regions due to the low value per cwt of milk.

The Southeast had the lowest output of milk per cow, 12,218 pounds, while its value of milk per cwt was the highest of the dairy regions. Returns to milk production improved in the Southeast. Concentrate expenses fell \$53 per cow in 1987, the largest decrease in any of the regions. Despite the decline,

concentrate expenses in the Southeast remained higher than any other region because of the high level of concentrate feeding in the region. Concentrates made up 76 percent of the feed costs in the Southeast. Feed costs made up 51 percent of total cash costs, down from 54 percent in 1986.

Variable costs per cwt in the Southern Plains were exceeded only by those in the Southeast. Feed costs were 55 percent of total cash costs, the second largest proportion of any region. Fixed cash costs and capital replacement charges were the second lowest of the dairy regions. Costs of facilities in the Southern Plains were low due to the warm climate. The low fixed costs combined with a high value of milk per cwt, resulting in the highest cash returns. Residual returns to management and risk were the second highest in the Southern Plains.

Variable costs per cow, particularly feed and concentrate costs, were lowest in the Upper Midwest. Fixed costs and capital replacement, however, were the highest among the regions. High fixed costs and high capital replacement charges resulted in the Upper Midwest yielding the lowest cash returns, which nonetheless topped 1986's returns.

STRUCTURE OF THE ACCOUNTS

ERS prepares and presents costs-of-production data in the form of an enterprise budget, which is a summary of all operator and landlord costs and returns associated with the production of an individual commodity. ERS prepares enterprise budgets on a per-unit basis, such as one acre or one animal. Each enterprise budget contains cost and returns measures separated into three major categories: gross value of production, cash expenses, and economic costs.

Gross Value of Production

ERS includes gross value of production so that residual returns to production management and risk can be determined. Gross value of production is based on product prices and yields. It includes the value of secondary products, such as straw, cottonseed, molasses, and culled livestock. Harvest-month market prices are used for all crops except sugarcane and sugar beets. The sugar crops are valued at season-average prices. Livestock are valued at the average price at the time of sale. Milk is valued at the average annual price received. We do not include direct Government commodity program payments, except for wool payments, in the

values of production. The Government operates direct payment programs for the production of corn, grain sorghum, barley, oats, wheat, rice, and upland cotton. The effects of Government programs on market prices are included. In the peanut, sugar, milk, and wool programs, the Government supports the product price through direct market intervention. Price-supporting nonrecourse loans for corn, grain sorghum, barley, oats, wheat, rice, soybeans, upland cotton, peanuts, and the sugar crops are available through the Government's Commodity Credit Corporation (CCC). For more information about Government commodity programs and costs and returns, see "Using Cost-of-Production Data" (p. 12).

"Gross value of production" is identical to "cash receipts" used in previous issues of *Costs of Production*. The change in terminology has been made to emphasize that these accounts measure returns to production and do not include direct Government payments.

Cash Expenses and Capital Replacement

Cash expenses are the out-of-pocket costs incurred during the production process. Cash expenses consist of variable and fixed expenses. Variable expenses are those incurred only if production takes place. They include seed, fertilizer, lime and chemicals, custom operations, hired labor, fuel and lubrication, repairs, drying, ginning, purchased irrigation water, feed, veterinary services, livestock and milk hauling, and hired management fees.

ERS tabulates cash returns (gross value of production less expenses) both before and after a charge for the replacement of capital invested in buildings and machinery. In any year, an operator may defer machinery and equipment purchases depending on the income or tax position of the farm. However, over the long run, operators must set aside funds to replace wornout equipment. The residual cash returns reflect funds available for family living, debt retirement, and other discretionary uses and should provide for economic depreciation of machinery and equipment.

Economic (Full Ownership) Costs

Total economic costs can be used to compare various commodities without regard to equity levels or tenure of producers. Economic costs represent the production situation as if the producer fully owns (no cash payments for loans or land rental) the production inputs. Economic costs partly consist of variable expenses (less actual interest paid) plus

general farm overhead, taxes and insurance, and the charge for capital replacement. The other economic costs are the opportunity costs associated with owned inputs: land, nonland capital, unpaid labor, and capital invested in operating inputs during the production process.

Gross value of production less total economic cost are the residual returns to management and risk. The returns to management and risk can be evaluated only in light of the given allocation of residual returns and are directly comparable across commodities only when the same procedure has been used for each. In the long run, the return to risk is expected to average near zero, although in any year, the residual return to risk could be positive or negative depending on weather and supply and demand factors. The return to management should be positive, but the level remains unknown and is speculative. Therefore, the residual returns to both management and risk should average above zero.

DATA SOURCES AND ESTIMATION PROCEDURES

ERS gathers costs-of-production data from the annual Farm Costs and Returns Survey (FCRS) and from secondary sources. Enterprise budgets are developed at the State level for each commodity in each major producing region. ERS then weights these data according to production and aggregates them to determine the regional and national costs of production.

The Farm Costs and Returns Survey

Since 1984, the annual FCRS has been the primary source of data for individual commodity production practices and quantities of inputs used and for whole-farm expenses associated with particular enterprises. The FCRS is conducted jointly by ERS and the National Agricultural Statistics Service (NASS). Besides an indepth whole-farm version, the FCRS has several specialized versions that gather data about particular commodity enterprises each year. Because of the costs of the survey, every enterprise cannot be surveyed every year. The specialized versions of the FCRS are based on a 4-year rotation. These data allow economists to measure the costs of production for the commodities surveyed that year. We update costs from other data sources between survey years for an enterprise.

The FCRS is a multiframe stratified survey composed of list and area frames. The list frame is made up of

farms known to have previously produced a commodity, and is stratified by size of enterprise. The area frame's land segments are stratified by land use. The sample is randomly drawn from the strata in each frame. Each questionnaire or observation represents a number of similar farms, the particular number being the survey expansion factor, which is the inverse of the probability of the observation being selected in the sample. The FCRS is an enumerated survey, with interviews of farm operators during February and March about production in the previous year.

Before 1984, the primary survey of costs of production was the Costs of Production Survey (COPS), conducted by USDA. USDA first drew the COPS samples from nonrandom lists of producers who had responded to other acreage and production surveys, based on probability proportional to size. The different sampling schemes between the COPS and the FCRS may have some effect on the data used in the underlying production budgets. For example, the 1985 dairy version of the FCRS is more representative of all producers and is less skewed toward larger farms than was the 1979 survey. As a result the 1985 average herd size and output per cow is less than reported in 1979, which is contrary to the industry trend.

The enterprise budgets in this report are based on surveys of production in the years shown below:

<u>Commodity</u>	<u>Production year</u>	<u>Commodity</u>	<u>Production year</u>
Corn	1982 & 1983 ^{1/}	Flax	1983
Sorghum	1986	Cotton	1982
Barley	1982 & 1983 ^{1/}	Sugar beets	1980 & 1984 ^{2/}
Oats	1983	Sugarcane	1980 & 1984 ^{2/}
Wheat	1986	Fed beef	1980
Rice	1984	Cow-calf	1980
Soybeans	1986	Hogs	1980
Sunflowers	1986	Sheep	1980
Peanuts	1982	Milk	1985

^{1/} The 1982 survey was conducted in the Southern States and the Pacific Northwest. The 1983 survey was conducted in the Northern States. ^{2/} Partial results from the 1984 survey have been incorporated.

Gross Value of Production

Gross value of production is the value of the commodity at the time it is produced or sold. Prices for most crops are harvest-month prices; prices for sugar crops are season-average market prices; livestock prices are average market prices at the time

of sale. We do not include gains and losses accruing from changes in asset values. Gross value of production is based on both yield and price. Weather is primarily responsible for yield fluctuations, and supply and demand factors account for the yearly price fluctuations. Yields and prices may be compared from year to year to determine if either is temporarily depressed or larger than normal or if longer run return problems are emerging. Yield data come from *Crop Production*, published by NASS, and from bulletins of State agricultural statistics offices. Milk sold per cow is the average from the FCRS, updated from *Milk Production*, published by NASS. Price data come from *Agricultural Prices*, published by NASS.

ERS includes potential revenues generated from sales of primary and secondary products. Secondary products typically include cottonseed, straw, beet tops, molasses, the value of residue following crop production, or the sale of culled breeding livestock. Total costs include the production of all primary and secondary products because, in most cases, costs for both primary and secondary products cannot be estimated separately. Again, estimates of the gross value of production omit direct Government commodity program payments, except for wool.

Cash Expenses and Capital Replacement

Data on seeding come from both *Agricultural Statistics* and the FCRS and COPS. Seed prices include both purchased hybrid varieties and home-produced seed. For a crop such as corn, which uses mostly hybrid seed, seed prices come directly from State seed price estimates in *Agricultural Prices*. Estimated composite seed prices are used when a portion of the seed is home-produced. The home-produced seed prices are based on the previous season-average prices for the crop plus an allowance for cleaning and treating. Data on the share of seed produced at home and cleaning cost come from the FCRS and COPS. NASS provides data on market prices for seed. FCRS and COPS furnish quantity data on fertilizer, lime, and gypsum use. Prices for each major nutrient come from the April *Agricultural Prices* and the Tennessee Valley Authority's *Commercial Fertilizers*.

The FCRS and COPS provide chemical cost data. Individually identified chemicals are not listed because of the large number of chemical compounds and trade names. We adjust nonsurvey-year chemical costs by the index of prices paid for agricultural chemicals provided in *Agricultural Prices*, a procedure that excludes variation in quantities and location of use.

Variables affecting pesticide use and costs, such as new chemicals, insect infestations, disease outbreaks, unusual weed problems, or rotation changes cannot be measured in nonsurvey years. However, because the FCRS and COPS are designed to yield reliable estimates at regional and national levels, we assume that localized pesticide use changes will not substantially affect aggregate figures.

Both custom operators and farmers apply pesticides. In many cases, they combine pesticide application with another farm machinery operation. Some dealers sell pesticides and then rent applicators to farmers. Many custom operators charge a flat rate and do not provide a cost breakdown between application and materials applied. Custom service cost estimates come from the FCRS and COPS. ERS updates these rates annually using a farm-services-and-rent index published by NASS.

Machinery labor requirements for each budget relate directly to machinery time requirements. Labor is assumed to equal 110 percent of tractor-use time (in the case of pulled implements) and 120 percent of self-propelled implement-use time. Labor associated with tractors and implements is 121 percent of the implement-use time. Total hours of labor equal the sum of all machine, irrigation, and livestock labor. Additional labor may be added to the budgets where applicable for irrigation or other hand operations as determined by FCRS and COPS data. ERS collected 1987 data on hired labor for crops. We estimated the percentage of labor hours paid and unpaid by crop, using FCRS data applied to the total labor expense.

Cash expenses are relatively easy to determine, but the procedure for calculating the cost of owning and operating machinery and equipment is more complex. Every farm has a different age and size distribution and different numbers of machinery and equipment items. Most farms produce more than one commodity, and an allocation of machinery costs among commodities should assess the relative use of machinery for each commodity.

The costs-of-production estimates rely on the COPS and FCRS data to determine machine use, including size, type, and number of passes over the field. This survey information helps create a machinery complement for a State or region which contains up to 100 machines and leads to the average number and size of machines necessary to produce a specific crop. ERS specifies the type of fuel used, age when purchased, length of life, total hours of annual use, and the list and purchase prices. Engineering relationships and a computerized budget generator

determine estimates of fuel use, repairs, total labor for crop production, and machinery replacement costs. The economic engineering equations, developed by the American Society of Agricultural Engineers (ASAE), calculate machinery fuel and repair costs as well as a replacement allowance, taxes, and insurance based on the original price of the machine and annual hours of use. Formulas also estimate the required amount of labor needed to perform machinery operations. The COPS and FCRS provide the amount of hand labor and labor required for livestock production.

ERS computes machinery costs on a per-hour basis, and budget costs reflect hours of use of each machine, which in turn depend on the size of machine and the number of times the machine passes over the acre. Engineering performance equations determine the hours of machine time. The theoretically estimated machinery time must be adjusted for lost time in turning corners, refueling the machine, and other interruptions. Per-acre time requirements for each machine are then multiplied by the number of times the machine moves over the field to determine total hours of use.

Fuel costs for tractors are related to power takeoff (PTO), horsepower size, and fuel consumption at a 55- to 60-percent load rate. For other machines, ERS gauges fuel consumption at the hourly rate specified for each machine. The total amount of fuel used for the production of the commodity is the sum of all the fuel used for each machine based on the required hours of use. Prices for fuels in each State, adjusted for refundable Federal and State excise taxes where necessary, come from the July issue of *Agricultural Prices*.

ERS updates list prices of machines annually. The June annual summary of *Agricultural Prices* shows average prices paid for some farm machinery in each State. Prices of specialized machines and prices of optional equipment, not included in the NASS machinery price survey, are supplemented by current price lists obtained from all major farm machinery manufacturers. Hours of use and ASAE-provided engineering equations determine tractor and machinery repairs.

Motor vehicle (trucks and pickups) costs are included in the machinery costs for fuel, lubrication, and repairs. Farm operators in the COP surveys provide vehicle sizes, annual mileage, and estimated hours of use to determine average hours of use per cropland acre. ERS estimates vehicle costs on an hourly basis

and multiplies them by the estimated hours of use per acre.

Estimates of drying expenses are based on the percentage of the crop dried and the initial moisture content. Estimates of the percentages of crops dried in the Corn Belt, for example, come from special reports published by States and results of special drying and storage studies. Annual updates reflect changes in fuel prices, yields, and initial moisture content. Cotton ginning and wrapping costs are based on annual ERS studies of ginning practices and costs in major producing States.

The FCRS and COPS data partially determine irrigation costs. In ground-water (well) regions, procedures for estimating costs are similar to those used for machinery. Analysts obtain data on average well depth, pumping rates, and distribution system type. Irrigation equipment, power units, and the distribution system, including the well, are part of a special irrigation complement. ERS also gathers power unit, distribution system, and well-drilling prices from State Extension Service budgets, State irrigation data, equipment dealers, and private companies. Machinery cost estimates include irrigation fuel, repair, and labor costs. Costs of purchased irrigation water appear as a separate item.

Livestock cash expenditures include labor, feed (purchased and homegrown), hauling, breeding, veterinary fees and medicines, fuel and lubrication, machinery repairs, general farm overhead, and miscellaneous items.

Farmers use grains and forages raised on the farm as the primary source of feed in most livestock-producing areas. The FCRS and COPS surveys provide data on the amounts of farm-grown and purchased feed. ERS prices farm-grown forages at their costs of production and values purchased forages at a market price. Purchased feed usually encompasses commercial feed mixes, supplements, and other minor feed items and sometimes also includes forages in many regions. ERS updates prices for each type of farm-grown feed using regionally weighted annual indexes. Commodity-weighted indexes and NASS price data determine the price of purchased grains fed. Grain for feed reflects market price rather than production cost. Updated commercial (mixed) feeds use the prices from 14-percent protein feed. NASS collects data on prices of baled hay to update the purchased forage prices.

The FCRS and COPS provide data on livestock hauling and regional livestock transportation costs. ERS updates them by using a weighted average of the

farm and motor supplies index (70 percent) and the fuels and energy index (30 percent) as reported in *Agricultural Prices*.

The FCRS and COPS also collect veterinary and medical expense data. The updating procedure reflects a weighted average of the nonagricultural hourly wage rate index (70 percent) and the agricultural chemicals index (30 percent).

The FCRS and COPS collect breeding fees and miscellaneous expenses data. ERS updates these items annually, using the "all production items" index in *Agricultural Prices*.

The FCRS and COPS measure livestock enterprise labor data. Hired labor is a cash expense. Hired labor that produces farm-grown feed appears in the feed costs. The economic cost section carries total unpaid labor for the enterprise and for any farm-grown feed.

Fixed cash expenses consist of general farm overhead, taxes, insurance, and interest paid. General farm overhead includes electricity for general farm use, telephone expenses, office supplies, fees and dues, water drainage, liability insurance, fence repairs, and general business expenses. ERS collects costs for these items from the FCRS and allocates the costs among the respective commodities on the basis of the gross value of production. Taxes include personal property taxes on machinery and real estate taxes. Basing insurance and personal property tax estimates on current machinery and livestock prices can change this component of total cost. Therefore, tax and insurance costs for machinery are first computed on the basis of current machinery prices and then lagged 4 years, which assumes that major high-cost items in the machinery complements, such as tractors, are owned by the average commercial producer for about 8 years.

The annual FCRS provides data on cash interest expenses. ERS calculates cash interest expenses for the farm separately and reports them as a total for all nonland and real estate categories. Real estate interest consists of payments on loans secured by real estate. Interest on all other loans falls under the nonland category. ERS estimates the enterprise interest expense by allocating the whole farm interest expenses to an individual enterprise's share of the total gross value of production. For most crops, interest expenses are separated into operating and real estate interest. For sugar crops and livestock, however, only total interest payments are provided.

ERS estimates the costs of machinery, equipment, and breeding livestock at current prices. Thus, the capital

replacement item represents a charge sufficient to maintain a machinery or livestock investment and production capacity through time.

The budgets include replacement costs associated with breeding stock. The value of purchased breeding animals depreciates to salvage value. The number of years over which the animal's value depreciates varies by region and species. Animals used for replacement but raised on the farm do not depreciate because the cost of raising these replacements is included in the budget. Depreciating raised replacements would be double-counting.

Economic (Full Ownership) Costs

Estimated economic, or full ownership, costs allow comparison of commodity returns across varying levels of equity and tenure. Variable expenses in the economic cost section are the same as those shown in the cash expenses section as are general farm overhead and taxes and insurance. The capital replacement allowance is identical to that listed in the cash expenses section. The remaining economic costs are operating capital, unpaid labor, other nonland capital, and land. These costs cannot be determined during the production period through market transactions and therefore must be imputed.

The earnings value of an owner-supplied variable input during the production process is often difficult, if not impossible, to determine. For example, one cannot easily assess the additional revenue earned when a producer invests more money in operating inputs rather than incurring additional short-term debt. As a consequence, the accounts in this report are calculated by assuming that the producer expects money invested in variable production inputs to earn at least as much as if it were rented or placed in a savings account or similar financial instrument. Thus, the latter, relatively risk-free rate of return, which is the opportunity cost of these funds, is used to estimate the imputed annual return to invested operating capital from the month of use to the harvest month. Because of the large number of financial instruments available to producers, ERS used the average 6-month U.S. Treasury bill rate. The rates for 1985, 1986, and 1987 were 7.66, 5.40, and 5.86 percent, respectively.

ERS does not value production assets, such as machinery, equipment, breeding livestock, and labor, at their acquisition costs. An operator could expect the capital invested in these inputs to receive an annual return equal to their opportunity costs, exclusive of asset valuation changes because of

inflation or deflation. For any nonland asset used in the production process, the rate of return must be calculated from (residual) earnings from the current production process. Earnings from price appreciation (capital gains) or price depreciation are not included here or in the value of production or receipts section. The rate of return for a given year is calculated taking the average of the previous 10-year total return to production assets in the agricultural sector, subtracting the value of the operator's labor used each year, and dividing by the respective value of production assets. All three series appear in *Economic Indicators of the Farm Sector: National Financial Summary*. A single real rate of return estimates the annual earnings of owner-supplied or owned assets for all commodities in all regions. Data are not available to estimate rates specific to various commodities and regions. The 10-year average calculated rates for 1977-87 are:

<u>Year</u>	<u>Percent</u>	<u>Year</u>	<u>Percent</u>
1978	3.37	1983	2.84
1979	3.34	1984	2.26
1980	3.27	1985	2.16
1981	3.09	1986	2.22
1982	3.02	1987	2.55

We calculated the returns to land for livestock enterprises in the same manner as the nonland factors, multiplying the average current land value by the 10-year rate of return. Livestock budgets ascertain land charges for feed production by using either market prices for feeds or costs of production, whichever is applicable.

For crops, ERS calculates the opportunity cost of land as a composite cash and share rental value by taking the per-acre cash rental rate and the per-acre share rental rate from survey data and weighting each by its respective share of total acreage rented. Because real estate taxes already appear in the survey rental rate data, taxes are subtracted from the rental value in the budget to prevent double-counting and to give a net rental value.

ERS used a similar procedure to value the time the operator and other unpaid workers work on the farm. Their labor is valued at the hired wage rate. Any additional return reflecting the operator's entrepreneurial skill appears in the residual return to management and risk. The wage rates for labor estimates, based on data published in *Farm Labor*, are the sum of the State's annual average hourly rate for "all hired farmworkers," plus the employer's share of social security taxes.

USING COST-OF-PRODUCTION DATA

ERS calculates four alternate total per-unit cost figures based on cash expenses and economic costs for 1985 to 1987. Included are all operator and landlord costs of production. Users should view each of these figures as a guide. Additional per-unit costs can be computed by adding or substituting the relevant costs, as determined by the user, within each section and then dividing by actual yields provided here or trend yields determined elsewhere. Either total cash expense or economic cost items (some cash expenses plus imputed opportunity costs of providing production assets, such as land, machinery, labor) must be summed independently, because some items are necessarily duplicated in each section.

Cash expense per unit reflects the shortrun out-of-pocket variable and fixed costs incurred, and minimum break-even price needed, on an average acre of cropland to raise and harvest a crop with a given yield.

Cash expense with replacement reflects the addition of capital replacement expenses and the amount of dollars (besides all cash expenses) needed to replace the machinery and equipment used up during the production process. To maintain production over time, the timely replacement of the capital stock is necessary.

Economic costs excluding land reflect all cash expenses less cash interest plus capital replacement, and allocated returns to unpaid labor, operating capital, and nonland capital. ERS must impute the allocated returns for these items because they cannot be measured directly. These per-unit costs indicate the average longer run costs which must be covered to keep an acre of land in production before payment of land rent, whether to the owner-operator or to the landholder.

Economic costs including land reflect total economic costs, including an estimated rent to the landowner and shows the break-even longrun average price necessary to continue producing a crop. In this case, all longrun costs appear in the budget.

Per-Unit-of-Yield Costs

Crop cost estimates in this report are presented on a per-acre basis but costs and returns on a per-unit-of-yield basis may also be of interest. The per-acre estimates may be simply divided by a per-acre yield, either the actual per-planted-acre yield listed in each table or another yield of the user's choosing. The following are per-unit-of-yield costs for major crops:

	1985	1986	1987	Avg. 1985- 87
	Dollars per bushel			
Corn:				
Cash expenses	1.69	1.43	1.44	1.52
Cash expenses with replacement	1.98	1.73	1.73	1.81
Economic costs excluding land	1.89	1.74	1.72	1.78
Economic costs including land	2.36	2.01	2.05	2.14
Grain sorghum:				
Cash expenses	1.36	1.21	1.18	1.25
Cash expenses with replacement	1.70	1.55	1.51	1.59
Economic costs excluding land	1.73	1.61	1.58	1.64
Economic costs including land	2.25	2.00	1.97	2.07
Barley:				
Cash expenses	1.91	1.60	1.64	1.72
Cash expenses with replacement	2.45	2.11	2.16	2.24
Economic costs excluding land	2.40	2.13	2.15	2.23
Economic costs including land	2.87	2.53	2.58	2.66
Oats:				
Cash expenses	1.57	1.17	1.35	1.36
Cash expenses with replacement	2.00	1.64	1.85	1.83
Economic costs excluding land	2.10	1.82	1.99	1.97
Economic costs including land	2.48	2.07	2.31	2.29
Wheat:				
Cash expenses	2.43	2.35	2.16	2.31
Cash expenses with replacement	3.06	3.04	2.80	2.97
Economic costs excluding land	3.01	3.09	2.84	2.98
Economic costs including land	3.99	3.92	3.64	3.85
Soybeans:				
Cash expenses	2.83	2.69	2.81	2.78
Cash expenses with replacement	3.70	3.58	3.68	3.65
Economic costs excluding land	3.57	3.51	3.61	3.56
Economic costs including land	4.98	4.83	4.95	4.92
	Dollars per pound			
Peanuts:				
Cash expenses	0.143	0.177	0.177	0.166
Cash expenses with replacement	.158	.195	.196	.183
Economic costs excluding land	.147	.175	.188	.170
Economic costs including land	.177	.213	.223	.204
Cotton:				
Cash expenses	.540	.591	.514	.548
Cash expenses with replacement	.616	.682	.580	.626
Economic costs excluding land	.578	.653	.525	.585
Economic costs including land	.676	.748	.632	.685

Residual Returns

Residual returns are measured by subtracting cost totals from an estimate of the value of production. In this publication, the values of production for all crops except sugar beets and sugarcane are based on harvest-month prices. Livestock are valued at the

average price at the time of sale. We measure the returns to production, which along with marketing, would require that storage and marketing costs be included. Returns to a producer participating in Government programs would require that compliance costs as well as benefits be included.

The user of the data will likely notice that for many of the crop enterprises in this publication, residual returns to management and risk, and even net cash returns before capital replacement, are negative, an unlikely result if costs and returns under Government programs were calculated.

Direct Government Payments and Costs and Returns

Two major uses of the USDA enterprise cost and return estimates are to aid legislators in establishing support levels and to aid policymakers, farm management specialists, farmers, the agribusiness community, and others in understanding the absolute and relative profitability of the production of various enterprises. The goal underlying the first major use is best attained by presenting cost and return estimates without the effects of Government programs. Policymakers are then better able to gauge what policies are appropriate to attain the desired objectives. The goal behind the second use of cost and return estimates is best attained by presenting the estimates after Government programs for an *ex-post* analysis. If a data user is interested in understanding the expected profitability of an enterprise in the future, then it is likely both sets of estimates, with and without Government payments, would help, depending on the data user's expectations about Government programs in the future.

Two major types of Government agricultural programs affect the cost and return estimates: direct market intervention programs and income and price support programs. Under the direct market intervention programs, the Government intervenes by limiting the import of products, including sugar, meat, and manufactured dairy products. In addition, milk prices are supported through CCC purchases of manufactured dairy products. The intended effect is to raise the market price. The effect from this type of Government program, therefore, cannot be readily identified in the enterprise cost and return estimates. The effects are implicitly included in the returns estimates which are based on the market price of the commodity.

What are commonly thought of as the traditional commodity programs include both an income and price support component. To be eligible for benefits

under either component of the program, a producer generally has to meet certain qualifications for participation, such as withholding certain acres from production. The income support component entitles the participant to receive a direct payment from the Government. The price support component entitles the participant to place the commodity under a nonrecourse loan or a Commodity Credit Corporation (CCC) loan. The producer has the option of not repaying the loan, so the loan can, in effect, become a sale of the commodity to the Government. The CCC loan rate serves as a price floor to the participating producer. Both income and price support components of the program were in existence in 1987/88 for wheat, corn, grain sorghum, barley, oats, cotton (upland and extra long staple), and rice. Only the price support component existed for soybeans, peanuts, sugarcane (mills only), and sugar beets (processors only).

Some of the effects of the traditional support programs on the returns for the major field crops may be identified separately. With income support payments, producers are paid a deficiency payment (based on the difference between the target price and the season average price) directly from the Government. The effect of the supports on enterprise returns and on the costs of field operations, which are necessary to comply with the conservation requirements of the program, is relatively easy to quantify. However, data currently do not exist to estimate these costs.

Several more subtle effects from traditional commodity programs are much more difficult to quantify separately for costs and returns estimates. First, income is lost from not producing on all the productive land. Second, because programs generally require acreage reductions, aggregate supply is limited, and market price and returns are affected. Both participants and nonparticipants alike feel this price effect. Third is the benefit to the participant from conserving acres which is difficult to quantify. This type of benefit generally leads to improved output in later production years, for example, due to planting of legumes or through summer fallow. Fourth, the benefits of Government programs may be capitalized into fixed inputs, such as land. This, in turn, affects cash and share rents.

The most obvious effects of the programs could be readily incorporated into the return estimates, but the inclusion of the costs associated with participating in the programs could not be included. Without a complete financial accounting of the effects of the decision to participate, the estimates would be misleading.

Table I--Prices and loan levels for commodities under Government programs, 1987/88

	Corn	Sorghum	Barley	Oats	Wheat	Soybeans
<u>Dollars per bushel</u>						
Harvest-month price	1.63	1.40	1.67	1.34	2.39	5.06
Season-average price	1.90	1.56	1.81	1.56	2.57	N/A
Target price	3.03	2.88	2.60	1.60	4.38	None
Loan level	1.82	1.74	1.49	.94	2.28	4.77
<u>Percentage of base acres</u>						
Participation rate	88	83	82	44	87	N/A
=====						
	Rice	Peanuts	Upland cotton	Refined beet sugar	Raw cane sugar	
	<u>Dollars per cwt</u>	<u>Dollars per ton</u>	<u>Cents per pound</u>			
Harvest-month price	4.83	540.00	65 ^{3/}	N/A	N/A	
Season-average price	6.95	N/A	64	13.23 ^{4/}	11.33 ^{4/}	
Target price	11.66	None	79.40	None	None	
Loan level	6.84	607.47 ^{1/} 149.75 ^{2/}	52.25	21.16 ^{5/}	18.00 ^{6/}	
<u>Percentage of base acres</u>						
Participation rate	97	N/A	92	N/A	N/A	

N/A = Not applicable. ^{1/} For quota peanuts. ^{2/} For nonquota peanuts. ^{3/} For all cotton. ^{4/} Preliminary. ^{5/} Grower receives approximately 62 percent of net returns for market sales for processor if processor places under CCC loan. ^{6/} Grower receives approximately 60 percent of receipts or loan proceeds from mill if mill places under CCC loan.

Figure 1

Corn Production Regions

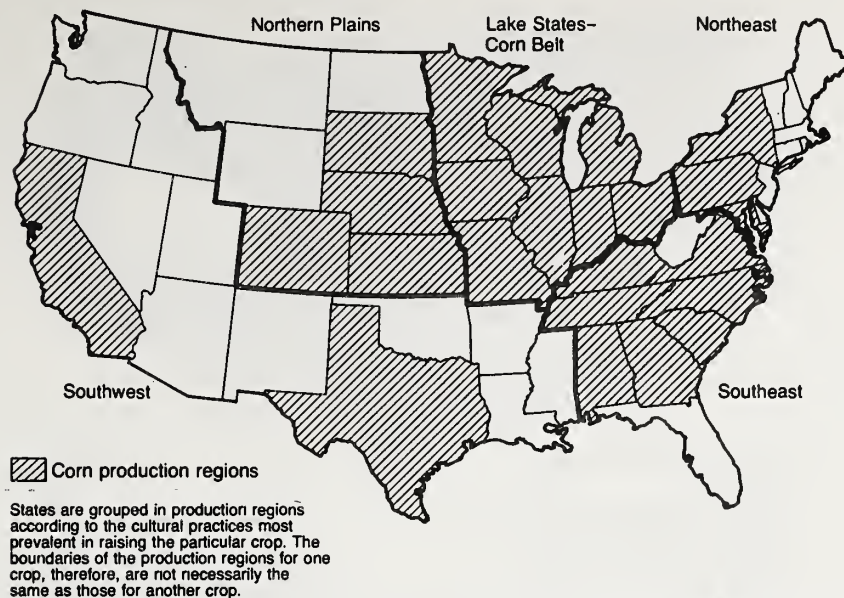


Figure 2

Sorghum Production Regions

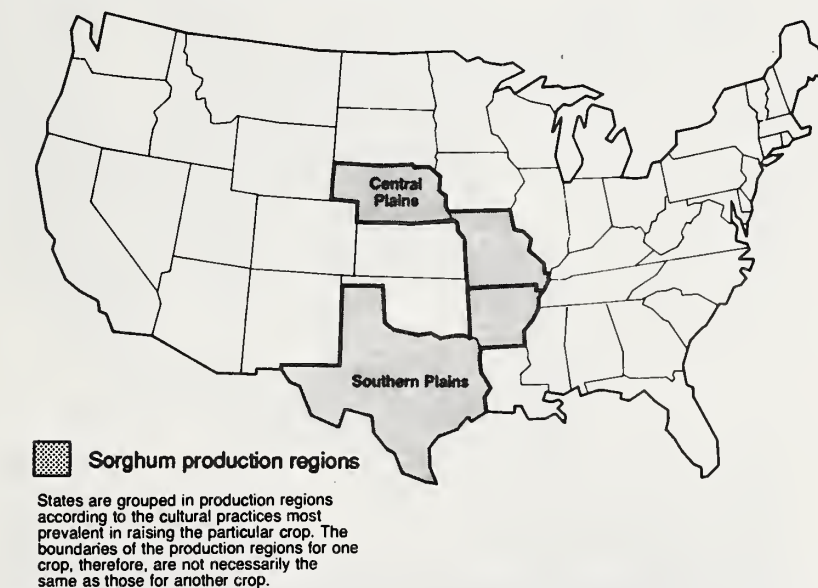


Figure 3

Barley Production Regions

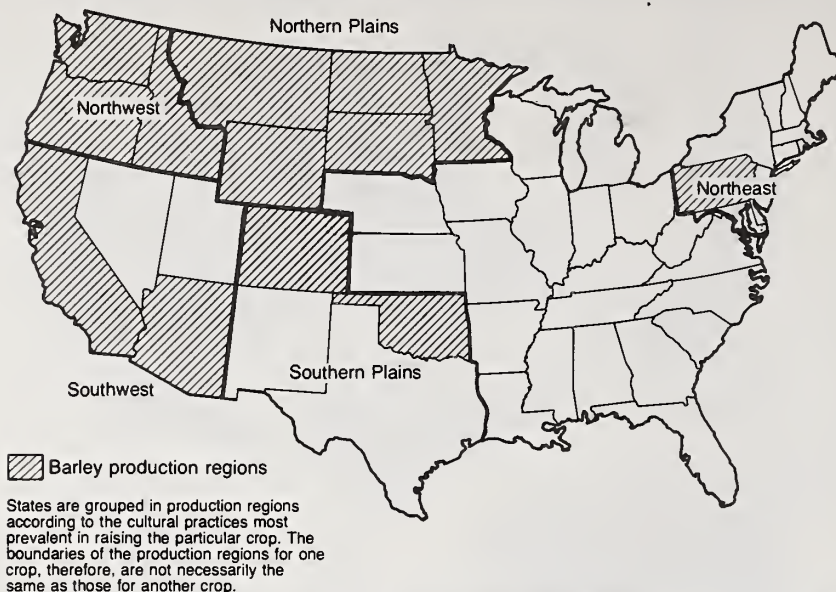


Figure 4

Oats Production Regions

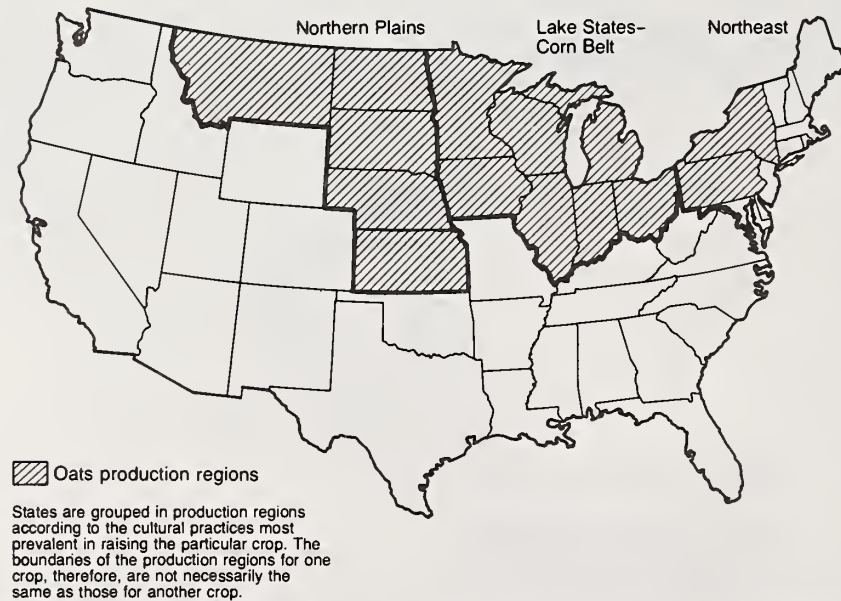
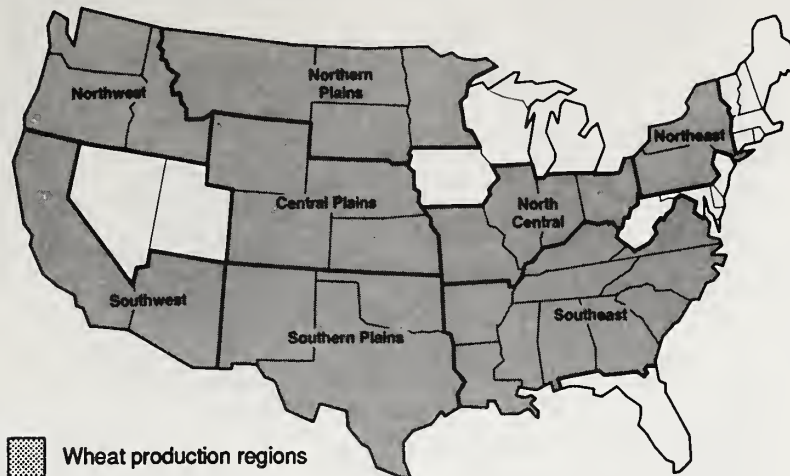


Figure 5

Wheat Production Regions



States are grouped in production regions according to the cultural practices most prevalent in raising the particular crop. The boundaries of the production regions for one crop, therefore, are not necessarily the same as those for another crop.

Figure 6

Rice Production Regions

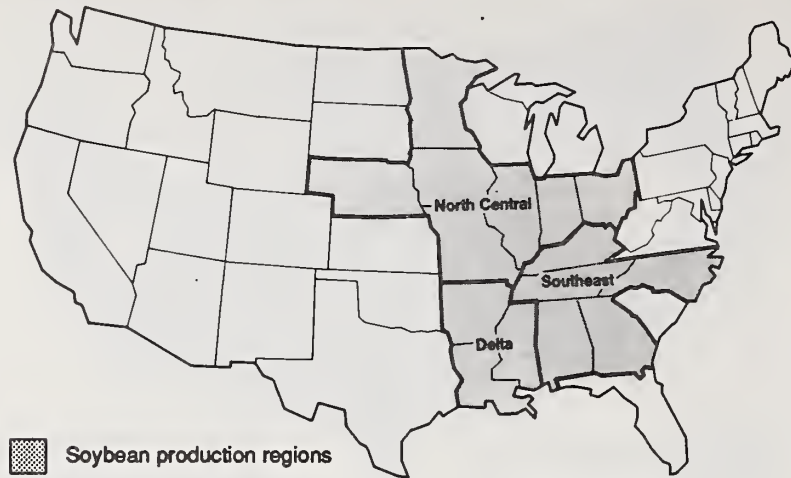


States are grouped in production regions according to the cultural practices most prevalent in raising the particular crop. The boundaries of the production regions for one crop, therefore, are not necessarily the same as those for another crop.

Gulf Coast region includes southwestern Louisiana and Southeastern Texas. Delta region includes northeastern Louisiana, western Mississippi, eastern Arkansas, and southeastern Missouri.

Figure 7

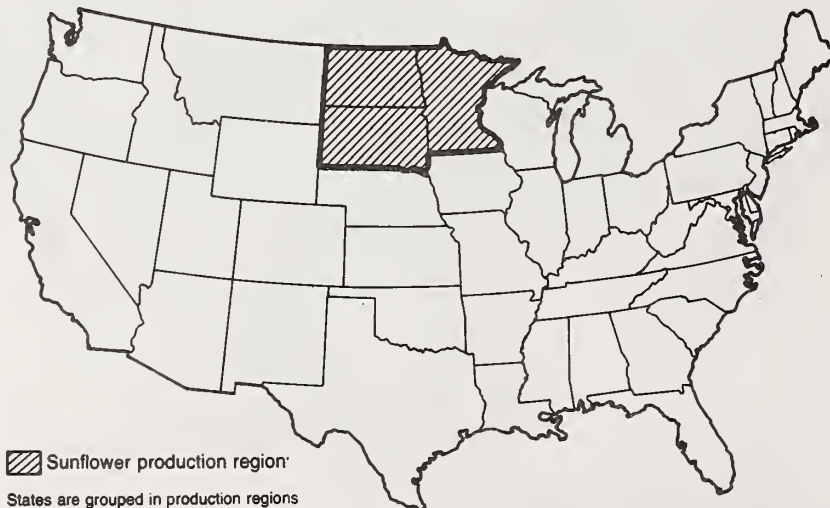
Soybean Production Regions



States are grouped in production regions according to the cultural practices most prevalent in raising the particular crop. The boundaries of the production regions for one crop, therefore, are not necessarily the same as those for another crop.

Figure 8

Sunflower Production Region



States are grouped in production regions according to the cultural practices most prevalent in raising the particular crop. The boundaries of the production regions for one crop, therefore, are not necessarily the same as those for another crop.

Figure 9

Peanuts Production Regions

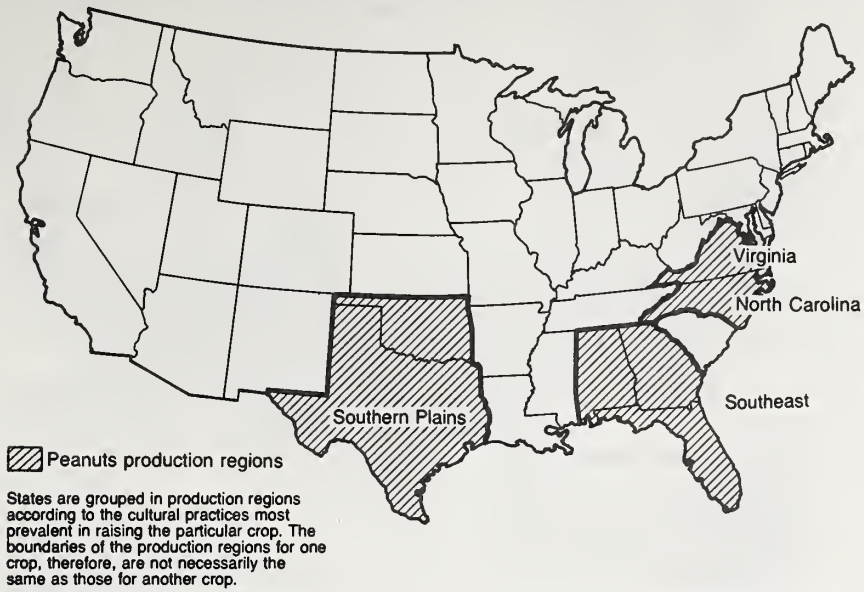


Figure 10

Flax Production Region



Figure 11

Cotton Production Regions

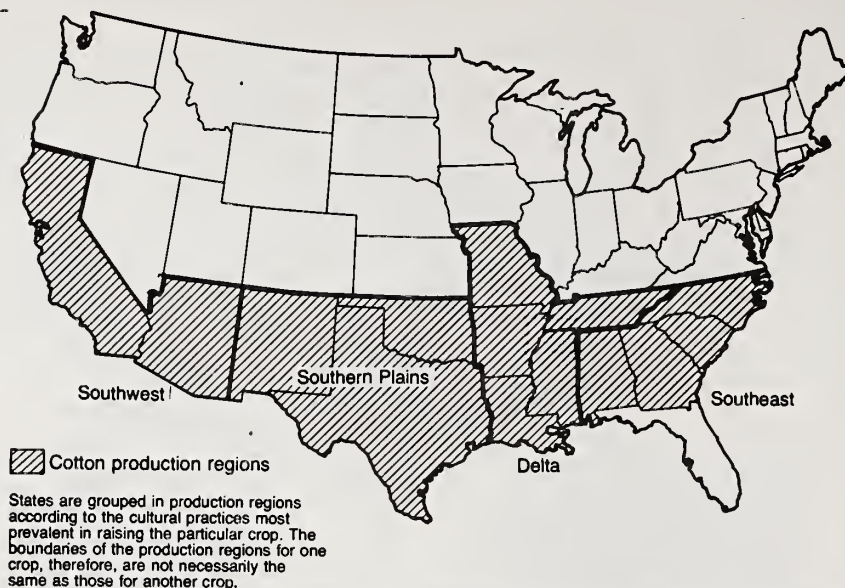


Figure 12

Sugar Beet Production Regions

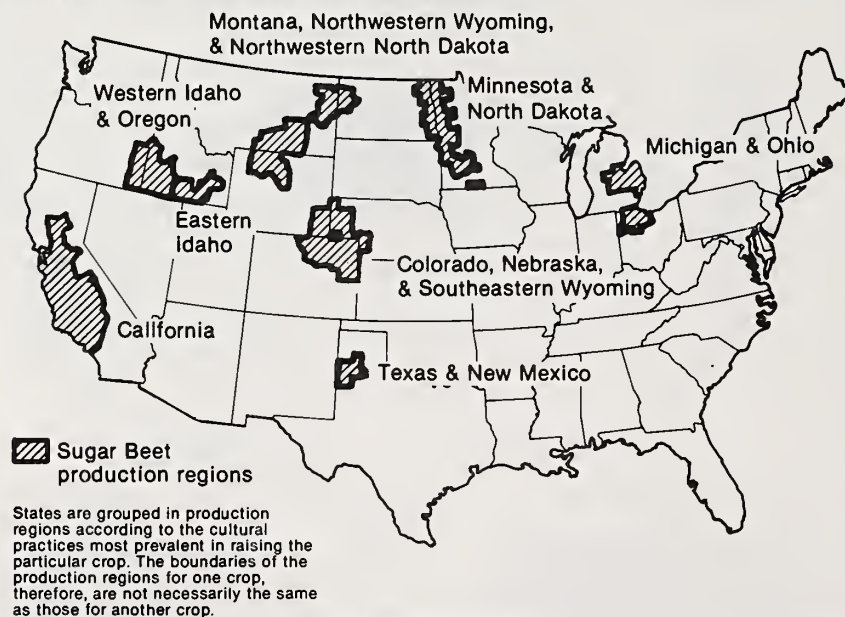


Figure 13

Sugarcane Production Regions

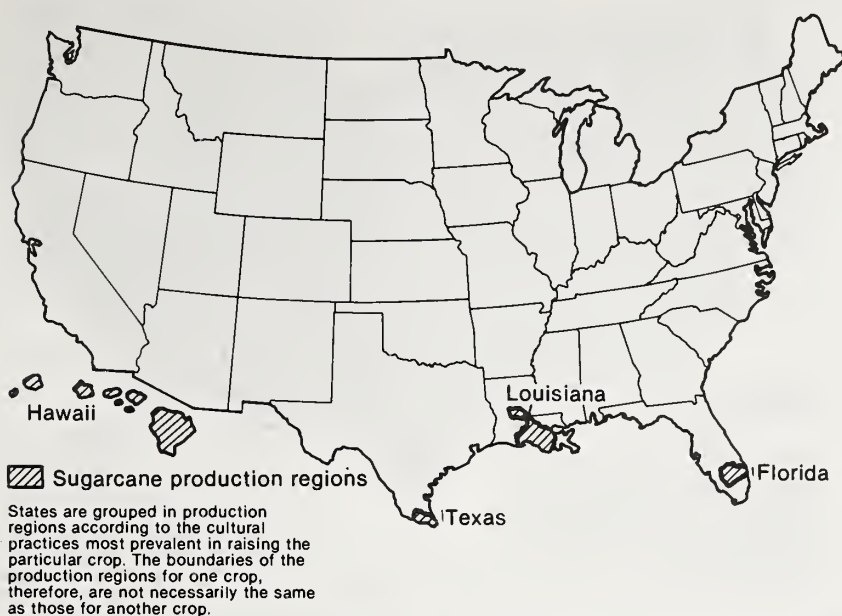


Figure 14

Fed Cattle Production Region



Figure 15

Cow-Calf Production Regions

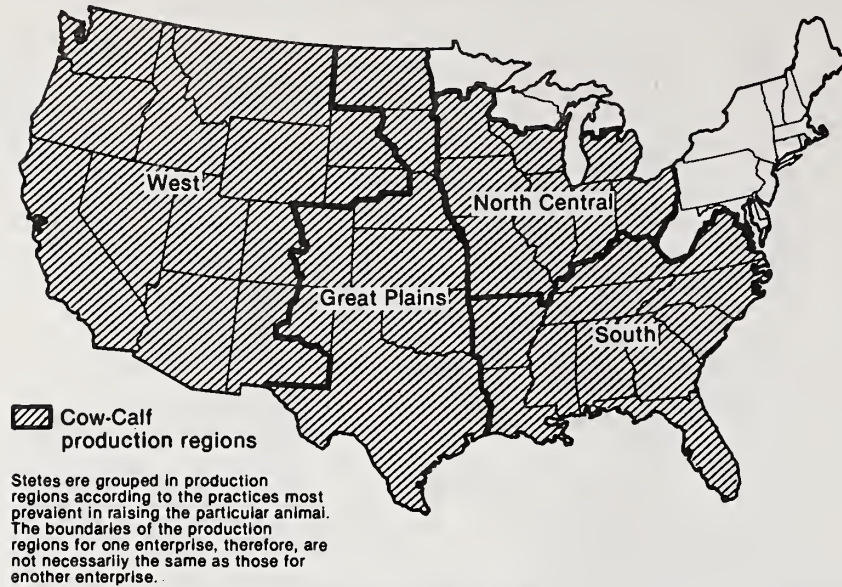


Figure 16

Hog Production Regions

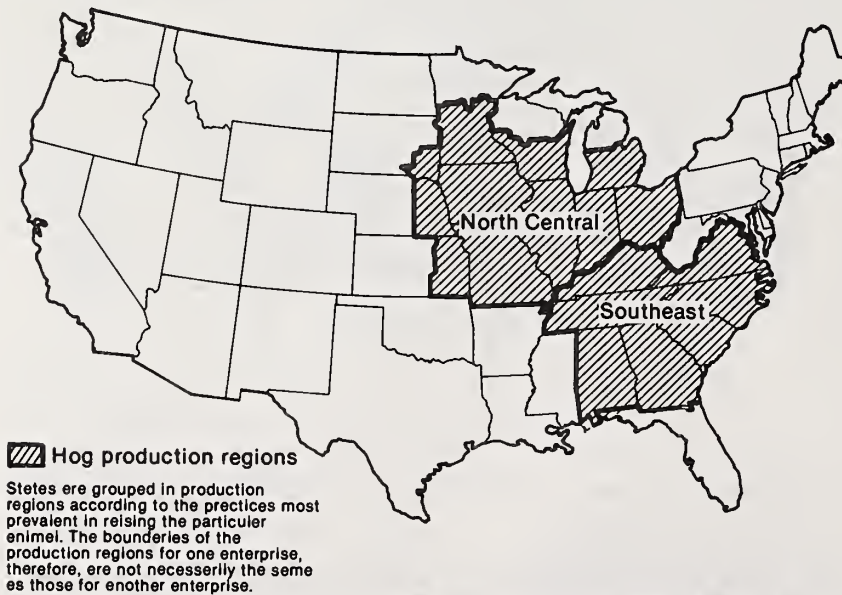


Figure 17

Sheep Production Region

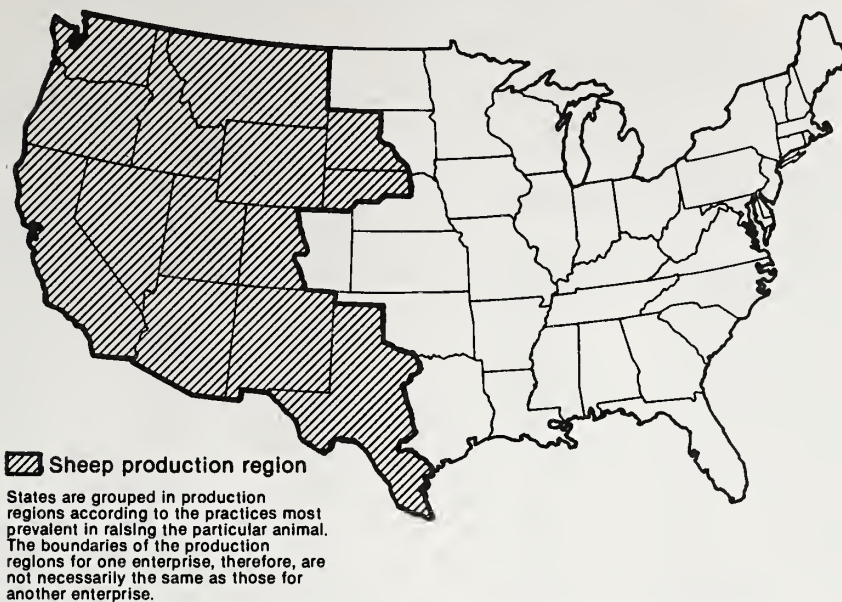


Figure 18

Dairy Production Regions

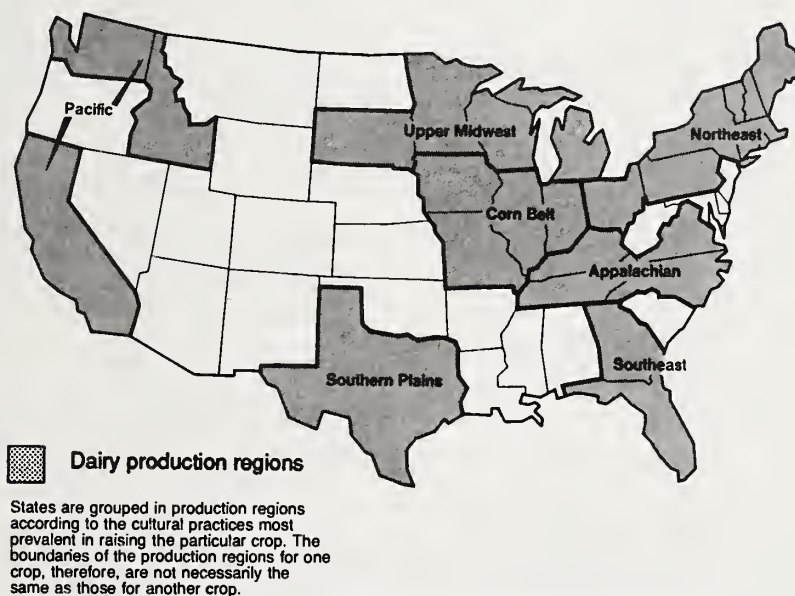


Table 1--U.S. corn production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	252.63	164.48	200.08
Total	252.63	164.48	200.08
Cash expenses:			
Seed	18.48	16.82	16.64
Fertilizer	50.99	41.99	39.47
Lime and gypsum	1.66	1.63	1.70
Chemicals	19.51	19.36	18.93
Custom operations	6.84	6.56	6.93
Fuel, lube, and electricity	15.75	11.17	12.64
Repairs	11.05	11.14	11.12
Hired labor	4.02	4.28	4.32
Purchased irrigation water	.35	.34	.35
Drying	7.12	6.85	6.35
Miscellaneous	.23	.22	.23
Technical services	.80	.81	1.22
Total, variable cash expenses	136.81	121.17	119.90
General farm overhead	10.93	9.39	13.59
Taxes and insurance	17.47	17.82	19.18
Interest on operating loans	12.60	7.79	7.61
Interest on real estate	20.12	12.83	15.80
Total, fixed cash expenses	61.12	47.83	56.18
Total, cash expenses	197.93	169.00	176.08
Value of production less cash expenses (excluding direct Gov't. payments)	54.70	-4.52	24.00
Capital replacement	34.62	34.82	35.36
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	20.08	-39.34	-11.36
Economic (full ownership) costs:			
Variable cash expenses	136.81	121.17	119.90
General farm overhead	10.93	9.39	13.59
Taxes and insurance	17.47	17.82	19.18
Capital replacement	34.62	34.82	35.36
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.36	2.74	2.95
Return to other nonland capital <u>4/</u>	6.56	6.80	7.91
Net land return <u>5/</u>	54.82	32.35	40.37
Unpaid labor	11.45	12.18	12.28
Total, economic costs	277.02	237.27	251.55
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-24.39	-72.79	-51.47
Harvest-period price (dollars/bu.)	2.15	1.39	1.63
Yield (bu./planted acre)	117.29	117.92	122.49

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 2--Corn production costs, Lake States and Corn Belt, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	255.32	168.51	204.59
Total	255.32	168.51	204.59
=====			
Cash expenses:			
Seed	18.84	17.08	16.88
Fertilizer	53.66	45.34	42.24
Lime and gypsum	1.38	1.40	1.55
Chemicals	20.29	20.11	19.60
Custom operations	6.54	6.38	6.93
Fuel, lube, and electricity	11.89	7.65	9.29
Repairs	9.64	9.78	9.80
Hired labor	3.59	3.81	3.94
Drying	8.31	8.17	7.18
Miscellaneous	.16	.16	.16
Technical services	1.02	1.02	1.57
Total, variable cash expenses	135.32	120.89	119.14
General farm overhead	10.49	8.89	13.17
Taxes and insurance	18.96	19.28	20.68
Interest on operating loans	13.16	7.81	7.53
Interest on real estate	21.16	13.85	16.02
Total, fixed cash expenses	63.77	49.83	57.40
Total, cash expenses	199.09	170.72	176.54
Value of production less cash expenses (excluding direct Gov't. payments)	56.23	-2.21	28.05
Capital replacement	34.87	35.06	35.43
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	21.36	-37.27	-7.38
=====			
Economic (full ownership) costs:			
Variable cash expenses	135.32	120.89	119.14
General farm overhead	10.49	8.89	13.17
Taxes and insurance	18.96	19.28	20.68
Capital replacement	34.87	35.06	35.43
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.34	2.74	2.95
Return to other nonland capital <u>4/</u>	6.55	6.80	7.84
Net land return <u>5/</u>	60.58	36.05	43.68
Unpaid labor	10.21	10.84	11.22
Total, economic costs	281.32	240.56	254.11
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-26.00	-72.05	-49.52
=====			
Harvest-period price (dollars/bu.)	2.09	1.33	1.61
Yield (bu./planted acre)	121.96	126.25	126.86
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 3--Corn production costs, Northeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	268.95	160.75	167.93
Total	268.95	160.75	167.93
Cash expenses:			
Seed	17.46	16.19	16.18
Fertilizer	45.63	39.11	36.88
Lime and gypsum	8.72	8.47	9.31
Chemicals	19.50	19.34	18.88
Custom operations	11.28	8.79	8.97
Fuel, lube, and electricity	12.79	9.10	9.90
Repairs	12.08	12.64	12.47
Hired labor	4.61	5.20	5.88
Drying	6.40	5.30	5.15
Miscellaneous	.28	.27	.28
Technical services	.14	.14	.14
Total, variable cash expenses	138.90	124.55	124.05
General farm overhead	20.60	24.00	21.76
Taxes and insurance	18.69	20.23	20.71
Interest on operating loans	10.95	3.54	8.19
Interest on real estate	23.56	16.96	16.93
Total, fixed cash expenses	73.80	64.73	67.59
Total, cash expenses	212.70	189.28	191.64
Value of production less cash expenses (excluding direct Gov't. payments)	56.25	-28.53	-23.71
Capital replacement	30.19	32.26	32.19
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	26.06	-60.79	-55.90
Economic (full ownership) costs:			
Variable cash expenses	138.90	124.55	124.05
General farm overhead	20.60	24.00	21.76
Taxes and insurance	18.69	20.23	20.71
Capital replacement	30.19	32.26	32.19
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.98	2.47	2.67
Return to other nonland capital <u>4/</u>	6.32	6.94	7.93
Net land return <u>5/</u>	26.31	22.16	22.79
Unpaid labor	13.14	14.81	16.75
Total, economic costs	258.12	247.42	248.84
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	10.83	-86.67	-80.91
Harvest-period price (dollars/bu.)	2.45	1.70	1.86
Yield (bu./planted acre)	109.75	94.33	90.50

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 4--Corn production costs, Northern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	257.16	167.52	205.47
Total	257.16	167.52	205.47
Cash expenses:			
Seed	17.92	16.61	15.96
Fertilizer	38.45	25.28	24.32
Lime and gypsum	.02	.04	.03
Chemicals	17.17	17.36	16.78
Custom operations	5.39	5.40	5.26
Fuel, lube, and electricity	28.73	23.07	25.21
Repairs	15.83	15.96	16.18
Hired labor	5.04	5.46	5.11
Purchased irrigation water	1.36	1.31	1.37
Drying	5.10	4.85	4.85
Miscellaneous	.28	.27	.28
Technical services	.46	.49	.48
Total, variable cash expenses	135.75	116.11	115.83
General farm overhead	11.66	9.08	15.88
Taxes and insurance	17.38	17.67	18.12
Interest on operating loans	14.02	8.65	8.59
Interest on real estate	17.12	10.54	18.19
Total, fixed cash expenses	60.18	45.94	60.78
Total, cash expenses	195.93	162.05	176.61
Value of production less cash expenses (excluding direct Gov't. payments)	61.23	5.47	28.86
Capital replacement	39.73	39.98	40.24
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	21.50	-34.51	-11.38
Economic (full ownership) costs:			
Variable cash expenses	135.75	116.11	115.83
General farm overhead	11.66	9.08	15.88
Taxes and insurance	17.38	17.67	18.12
Capital replacement	39.73	39.98	40.24
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.47	2.71	2.88
Return to other nonland capital <u>4/</u>	7.75	8.01	9.37
Net land return <u>5/</u>	47.69	23.68	34.67
Unpaid labor	14.34	15.55	14.54
Total, economic costs	278.77	232.78	251.53
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-21.61	-65.26	-46.06
Harvest-period price (dollars/bu.)	2.21	1.44	1.61
Yield (bu./planted acre)	116.53	116.41	127.77

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 5--Corn production costs, Southeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	205.57	111.18	142.41
Total	205.57	111.18	142.41
=====			
Cash expenses:			
Seed	17.26	15.42	15.85
Fertilizer	57.42	51.43	49.10
Lime and gypsum	4.18	4.16	4.11
Chemicals	18.03	17.72	17.36
Custom operations	8.37	7.83	8.58
Fuel, lube, and electricity	12.88	7.69	9.86
Repairs	10.61	9.68	10.26
Hired labor	4.36	4.35	4.68
Drying	3.76	2.85	3.35
Miscellaneous	.18	.17	.18
Technical services	.17	.17	.18
Total, variable cash expenses	137.22	121.47	123.51
General farm overhead	7.38	4.76	7.94
Taxes and insurance	7.80	7.79	8.22
Interest on operating loans	5.45	4.97	4.35
Interest on real estate	16.98	6.49	8.21
Total, fixed cash expenses	37.61	24.01	28.72
Total, cash expenses	174.83	145.48	152.23
Value of production less cash expenses (excluding direct Gov't. payments)	30.74	-34.30	-9.82
Capital replacement	24.05	22.83	23.70
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	6.69	-57.13	-33.52
=====			
Economic (full ownership) costs:			
Variable cash expenses	137.22	121.47	123.51
General farm overhead	7.38	4.76	7.94
Taxes and insurance	7.80	7.79	8.22
Capital replacement	24.05	22.83	23.70
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.10	2.64	2.87
Return to other nonland capital <u>4/</u>	4.51	4.31	5.19
Net land return <u>5/</u>	35.43	22.81	25.92
Unpaid labor	12.41	12.37	13.32
Total, economic costs	232.90	198.98	210.67
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-27.33	-87.80	-68.26
=====			
Harvest-period price (dollars/bu.)	2.34	1.68	1.82
Yield (bu./planted acre)	87.79	66.30	78.35
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 6--Corn production costs, Southwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	290.71	227.67	236.68
Total	290.71	227.67	236.68
=====			
Cash expenses:			
Seed	18.50	16.97	16.86
Fertilizer	47.21	41.59	36.29
Lime and gypsum	.57	.63	.74
Chemicals	19.19	18.80	18.06
Custom operations	13.18	12.34	11.75
Fuel, lube, and electricity	48.69	38.67	40.43
Repairs	17.35	17.08	17.06
Hired labor	7.11	7.22	7.34
Purchased irrigation water	4.66	4.49	4.68
Drying	1.34	1.26	1.16
Miscellaneous	1.65	1.59	1.66
Technical services	.34	.34	.34
Total, variable cash expenses	179.79	160.98	156.38
General farm overhead	16.23	20.70	16.37
Taxes and insurance	9.87	10.07	10.08
Interest on operating loans	15.63	17.69	12.45
Interest on real estate	17.69	17.80	12.53
Total, fixed cash expenses	59.42	66.26	51.43
Total, cash expenses	239.21	227.24	207.81
Value of production less cash expenses (excluding direct Gov't. payments)	51.50	.43	28.87
Capital replacement	37.57	36.97	36.80
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	13.93	-36.54	-7.93
=====			
Economic (full ownership) costs:			
Variable cash expenses	179.79	160.98	156.38
General farm overhead	16.23	20.70	16.37
Taxes and insurance	9.87	10.07	10.08
Capital replacement	37.57	36.97	36.80
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.74	3.68	3.91
Return to other nonland capital <u>4/</u>	6.49	6.54	7.49
Net land return <u>5/</u>	56.66	42.71	44.90
Unpaid labor	20.22	20.56	20.89
Total, economic costs	332.58	302.21	296.82
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-41.87	-74.54	-60.14
=====			
Harvest-period price (dollars/bu.)	2.63	1.95	1.94
Yield (bu./planted acre)	110.55	116.71	122.04
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 7--U.S. grain sorghum production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	124.99	91.57	96.44
Total	124.99	91.57	96.44
=====			
Cash expenses:			
Seed	3.81	3.81	3.40
Fertilizer	20.34	17.65	15.39
Chemicals	9.71	9.73	10.11
Custom operations	3.90	3.94	3.79
Fuel, lube, and electricity	13.76	9.33	10.80
Repairs	7.75	7.87	7.97
Hired labor	2.39	2.54	2.47
Purchased irrigation water	.13	.13	.13
Drying	.76	.70	.62
Technical services	.06	.06	.06
Total, variable cash expenses	62.61	55.75	54.74
General farm overhead	5.67	6.01	6.84
Taxes and insurance	7.51	7.78	8.19
Interest on operating loans	6.63	5.51	4.40
Interest on real estate	7.08	5.95	6.94
Total, fixed cash expenses	26.89	25.25	26.37
Total, cash expenses	89.50	81.00	81.11
Value of production less cash expenses (excluding direct Gov't. payments)	35.49	10.57	15.33
Capital replacement	22.56	22.58	22.66
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	12.93	-12.01	-7.33
=====			
Economic (full ownership) costs:			
Variable cash expenses	62.61	55.75	54.74
General farm overhead	5.67	6.01	6.84
Taxes and insurance	7.51	7.78	8.19
Capital replacement	22.56	22.58	22.66
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.17	1.39	1.46
Return to other nonland capital <u>4/</u>	4.11	4.25	4.95
Net land return <u>5/</u>	33.79	25.72	26.51
Unpaid labor	9.56	10.17	9.88
Total, economic costs	147.98	133.65	135.23
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-22.99	-42.08	-38.79
=====			
Harvest-period price (dollars/bu.)	1.90	1.37	1.40
Yield (bu./planted acre)	65.89	66.91	68.79
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 8--Grain sorghum production costs, Central Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	126.18	94.60	98.65
Total	126.18	94.60	98.65
Cash expenses:			
Seed	3.52	3.54	3.15
Fertilizer	20.64	18.02	15.84
Chemicals	11.76	11.80	11.95
Custom operations	2.84	2.85	2.85
Fuel, lube, and electricity	10.19	7.01	8.47
Repairs	7.18	7.36	7.52
Hired labor	1.91	2.04	1.96
Drying	1.09	1.01	.82
Technical services	.09	.08	.09
Total, variable cash expenses	59.22	53.71	52.65
General farm overhead	5.25	4.86	7.30
Taxes and insurance	8.58	8.90	9.19
Interest on operating loans	6.44	4.76	3.98
Interest on real estate	8.37	5.94	8.15
Total, fixed cash expenses	28.64	24.46	28.62
Total, cash expenses	87.86	78.17	81.27
Value of production less cash expenses (excluding direct Gov't. payments)	35.55	13.65	14.91
Capital replacement	21.93	22.14	22.19
Value of production less cash expenses and replacement (excluding direct Gov't. payments)	16.39	-5.71	-4.81
Economic (full ownership) costs:			
Variable cash expenses	59.22	53.71	52.65
General farm overhead	5.25	4.86	7.30
Taxes and insurance	8.58	8.90	9.19
Capital replacement	21.93	22.14	22.19
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.12	1.38	1.44
Return to other nonland capital <u>4/</u>	4.17	4.37	5.05
Net land return <u>5/</u>	34.40	26.57	27.13
Unpaid labor	7.63	8.17	7.84
Total, economic costs	143.30	130.01	132.79
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-17.12	-35.50	-34.13
Harvest-period price (dollars/bu.)	1.80	1.26	1.36
Yield (bu./planted acre)	70.21	75.28	72.69

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 9--Grain sorghum production costs, Southern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	123.15	86.95	92.22
Total	123.15	86.95	92.22
=====			
Cash expenses:			
Seed	4.24	4.19	3.90
Fertilizer	19.88	17.07	14.55
Chemicals	6.52	6.58	6.60
Custom operations	5.56	5.60	5.61
Fuel, lube, and electricity	19.30	12.87	15.25
Repairs	8.64	8.64	8.82
Hired labor	3.14	3.30	3.44
Purchased irrigation water	.35	.34	.34
Drying	.26	.21	.23
Technical services	.02	.02	.02
Total, variable cash expenses	67.91	58.82	58.77
=====			
General farm overhead	6.32	7.78	5.96
Taxes and insurance	5.86	6.07	6.30
Interest on operating loans	6.92	6.67	5.20
Interest on real estate	5.07	5.97	4.65
Total, fixed cash expenses	24.17	26.49	22.11
Total, cash expenses	92.08	85.31	80.88
=====			
Value of production less cash expenses (excluding direct Gov't. payments)	31.07	-1.64	11.34
Capital replacement	23.54	23.25	23.58
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	7.53	-21.61	-12.24
=====			
Economic (full ownership) costs:			
Variable cash expenses	67.91	58.82	58.77
General farm overhead	6.32	7.78	5.96
Taxes and insurance	5.86	6.07	6.30
Capital replacement	23.54	23.25	23.58
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.24	1.41	1.51
Return to other nonland capital <u>4/</u>	4.01	4.06	4.76
Net land return <u>5/</u>	32.85	24.41	25.32
Unpaid labor	12.54	13.21	13.78
Total, economic costs	155.27	139.01	139.97
=====			
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-32.12	-52.06	-47.75
=====			
Harvest-period price (dollars/bu.)	2.08	1.61	1.50
Yield (bu./planted acre)	59.17	54.15	61.38
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 10--U.S. barley production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	83.46	69.35	78.19
Secondary crop	3.58	3.04	3.08
Total	87.04	72.39	81.27
Cash expenses:			
Seed	6.08	4.41	4.09
Fertilizer	15.63	13.39	12.56
Lime and gypsum	.03	.03	.04
Chemicals	6.03	5.87	5.60
Custom operations	2.88	2.86	2.34
Fuel, lube, and electricity	10.88	7.27	7.66
Repairs	9.00	8.90	8.64
Hired labor	4.91	5.21	4.97
Purchased irrigation water	1.63	1.57	1.64
Miscellaneous	.70	.67	.70
Technical services	.12	.13	.13
Total, variable cash expenses	57.89	50.31	48.37
General farm overhead	5.49	5.39	6.95
Taxes and insurance	9.00	9.31	9.41
Interest on operating loans	5.53	3.90	3.58
Interest on real estate	8.03	6.45	8.87
Total, fixed cash expenses	28.05	25.05	28.81
Total, cash expenses	85.94	75.36	77.18
Value of production less cash expenses (excluding direct Gov't. payments)	1.10	-2.97	4.09
Capital replacement	24.06	24.41	24.29
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-22.96	-27.38	-20.20
Economic (full ownership) costs:			
Variable cash expenses	57.89	50.31	48.37
General farm overhead	5.49	5.39	6.95
Taxes and insurance	9.00	9.31	9.41
Capital replacement	24.06	24.41	24.29
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.30	.79	.83
Return to other nonland capital <u>4/</u>	4.47	4.65	5.32
Net land return <u>5/</u>	21.15	18.59	20.31
Unpaid labor	5.54	5.88	5.60
Total, economic costs	128.90	119.33	121.08
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-41.86	-46.94	-39.81
Harvest-period price (dollars/bu.)	1.86	1.47	1.67
Yield (bu./planted acre)	44.96	47.21	46.96

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 11--Barley production costs, Northeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	93.75	71.87	66.30
Secondary crop	55.32	51.63	61.77
Total	149.07	123.50	128.07
=====			
Cash expenses:			
Seed	9.59	9.26	8.60
Fertilizer	19.24	16.92	16.33
Lime and gypsum	5.04	4.88	5.35
Chemicals	.19	.19	.19
Custom operations	6.98	6.98	6.79
Fuel, lube, and electricity	11.90	8.14	9.23
Repairs	8.45	8.45	8.36
Hired labor	8.92	9.75	11.27
Miscellaneous	1.95	1.87	1.96
Total, variable cash expenses	72.26	66.45	68.08
General farm overhead	11.42	18.44	16.60
Taxes and insurance	22.19	23.43	23.86
Interest on operating loans	6.07	2.72	6.25
Interest on real estate	13.06	13.03	12.91
Total, fixed cash expenses	52.74	57.62	59.62
Total, cash expenses	125.00	124.07	127.70
Value of production less cash expenses (excluding direct Gov't. payments)	24.07	-.57	.37
Capital replacement	29.41	29.41	29.26
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-5.34	-29.98	-28.89
=====			
Economic (full ownership) costs:			
Variable cash expenses	72.26	66.45	68.08
General farm overhead	11.42	18.44	16.60
Taxes and insurance	22.19	23.43	23.86
Capital replacement	29.41	29.41	29.26
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.10	.73	.82
Return to other nonland capital <u>4/</u>	6.51	6.69	7.64
Net land return <u>5/</u>	29.17	26.22	29.03
Unpaid labor	10.06	11.00	12.72
Total, economic costs	182.12	182.36	188.01
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-33.05	-58.86	-59.94
=====			
Harvest-period price (dollars/bu.)	1.62	1.29	1.26
Yield (bu./planted acre)	57.87	55.71	52.62
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 12--Barley production costs, Northern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	65.11	51.59	64.22
Secondary crop	3.27	2.69	2.69
Total	68.38	54.28	66.91
=====			
Cash expenses:			
Seed	5.01	3.66	3.47
Fertilizer	14.20	12.23	11.72
Chemicals	5.51	5.45	5.32
Custom operations	1.40	1.59	1.54
Fuel, lube, and electricity	8.27	5.23	6.14
Repairs	7.46	7.58	7.60
Hired labor	4.15	4.48	4.29
Purchased irrigation water	.31	.30	.31
Miscellaneous	.21	.22	.21
Technical services	.13	.13	.14
Total, variable cash expenses	46.66	40.86	40.75
=====			
General farm overhead	3.54	3.49	5.57
Taxes and insurance	7.89	8.31	8.48
Interest on operating loans	4.25	2.84	3.01
Interest on real estate	5.52	4.25	7.34
Total, fixed cash expenses	21.20	18.89	24.40
Total, cash expenses	67.86	59.75	65.15
=====			
Value of production less cash expenses (excluding direct Gov't. payments)	.52	-5.47	1.76
Capital replacement	22.37	23.31	23.36
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-21.85	-28.78	-21.60
=====			
Economic (full ownership) costs:			
Variable cash expenses	46.66	40.86	40.75
General farm overhead	3.54	3.49	5.57
Taxes and insurance	7.89	8.31	8.48
Capital replacement	22.37	23.31	23.36
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.13	.69	.73
Return to other nonland capital <u>4/</u>	4.22	4.48	5.16
Net land return <u>5/</u>	18.75	16.80	18.32
Unpaid labor	4.69	5.06	4.84
Total, economic costs	109.24	102.99	107.21
=====			
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-40.86	-48.71	-40.30
=====			
Harvest-period price (dollars/bu.)	1.59	1.18	1.48
Yield (bu./planted acre)	41.08	43.78	43.53
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 13--Barley production costs, Northwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	115.73	117.30	138.73
Secondary crop	3.43	3.12	3.17
Total	119.16	120.42	141.90
Cash expenses:			
Seed	7.59	5.95	5.77
Fertilizer	18.44	16.08	15.35
Chemicals	7.77	7.47	7.29
Custom operations	3.26	3.30	3.20
Fuel, lube, and electricity	13.29	10.28	11.55
Repairs	12.58	12.79	13.05
Hired labor	6.11	6.59	6.93
Purchased irrigation water	2.98	2.86	2.99
Miscellaneous	.64	.61	.64
Technical services	.07	.07	.07
Total, variable cash expenses	72.73	66.01	66.84
General farm overhead	9.06	10.11	12.54
Taxes and insurance	11.08	11.71	12.15
Interest on operating loans	7.91	6.61	6.09
Interest on real estate	12.59	12.18	16.04
Total, fixed cash expenses	40.64	40.61	46.82
Total, cash expenses	113.37	106.62	113.66
Value of production less cash expenses (excluding direct Gov't. payments)	5.79	13.80	28.24
Capital replacement	27.96	27.99	28.85
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-22.17	-14.19	-0.61
Economic (full ownership) costs:			
Variable cash expenses	72.73	66.01	66.84
General farm overhead	9.06	10.11	12.54
Taxes and insurance	11.08	11.71	12.15
Capital replacement	27.96	27.99	28.85
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.41	.91	1.02
Return to other nonland capital <u>4/</u>	5.05	5.19	6.18
Net land return <u>5/</u>	26.90	25.33	30.34
Unpaid labor	6.90	7.44	7.81
Total, economic costs	161.08	154.69	165.73
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-41.92	-34.27	-23.83
Harvest-period price (dollars/bu.)	2.22	2.07	2.16
Yield (bu./planted acre)	52.05	56.68	64.29

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 14--Barley production costs, Southern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	127.59	90.57	117.26
Secondary crop	2.97	2.87	2.77
Total	130.56	93.44	120.03
Cash expenses:			
Seed	6.97	4.65	2.16
Fertilizer	15.00	11.86	11.00
Chemicals	5.70	5.52	5.33
Custom operations	13.76	12.93	12.83
Fuel, lube, and electricity	19.17	15.87	16.44
Repairs	11.87	11.69	11.77
Hired labor	6.18	7.75	6.25
Purchased irrigation water	2.54	2.45	2.55
Miscellaneous	.45	.44	.46
Technical services	.05	.05	.05
Total, variable cash expenses	81.69	73.20	68.84
General farm overhead	9.88	7.57	9.21
Taxes and insurance	8.30	8.43	8.67
Interest on operating loans	9.96	4.49	9.26
Interest on real estate	11.64	9.10	10.95
Total, fixed cash expenses	39.78	29.59	38.09
Total, cash expenses	121.47	102.79	106.93
Value of production less cash expenses (excluding direct Gov't. payments)	9.09	-9.35	13.10
Capital replacement	27.84	27.51	27.82
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-18.75	-36.86	-14.72
Economic (full ownership) costs:			
Variable cash expenses	81.69	73.20	68.84
General farm overhead	9.88	7.57	9.21
Taxes and insurance	8.30	8.43	8.67
Capital replacement	27.84	27.51	27.82
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.65	1.05	1.05
Return to other nonland capital <u>4/</u>	5.05	5.12	5.95
Net land return <u>5/</u>	27.81	16.26	23.69
Unpaid labor	6.96	8.74	7.04
Total, economic costs	169.19	147.88	152.27
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-38.63	-54.44	-32.24
Harvest-period price (dollars/bu.)	2.28	1.76	2.03
Yield (bu./planted acre)	55.99	51.56	57.62

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 15--Barley production costs, Southwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	145.78	110.52	84.14
Secondary crop	2.26	1.78	1.72
Total	148.04	112.30	85.86
Cash expenses:			
Seed	12.50	8.22	8.35
Fertilizer	21.65	20.24	18.80
Chemicals	5.71	6.00	5.87
Custom operations	12.94	12.50	11.23
Fuel, lube, and electricity	29.26	18.79	19.18
Repairs	10.64	9.46	9.70
Hired labor	8.08	7.75	8.16
Purchased irrigation water	10.00	9.62	10.05
Miscellaneous	5.85	5.63	5.88
Technical services	.33	.30	.29
Total, variable cash expenses	116.96	98.51	97.50
General farm overhead	11.01	10.04	7.38
Taxes and insurance	13.06	12.98	13.40
Interest on operating loans	8.31	7.68	3.04
Interest on real estate	17.27	11.75	6.13
Total, fixed cash expenses	49.65	42.45	29.95
Total, cash expenses	166.61	140.96	127.45
Value of production less cash expenses (excluding direct Gov't. payments)	-18.57	-28.66	-41.59
Capital replacement	24.76	21.85	22.88
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-43.33	-50.51	-64.47
Economic (full ownership) costs:			
Variable cash expenses	116.96	98.51	97.50
General farm overhead	11.01	10.04	7.38
Taxes and insurance	13.06	12.98	13.40
Capital replacement	24.76	21.85	22.88
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.82	1.74	1.91
Return to other nonland capital <u>4/</u>	4.42	4.00	4.80
Net land return <u>5/</u>	19.96	16.10	13.74
Unpaid labor	9.11	8.73	9.20
Total, economic costs	202.10	173.95	170.82
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-54.06	-61.65	-84.96
Harvest-period price (dollars/bu.)	2.69	2.10	2.05
Yield (bu./planted acre)	54.22	52.72	41.11

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 16--U.S. oat production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	55.61	49.39	74.27
Secondary crop	23.82	20.26	22.98
Total	79.43	69.65	97.25
=====			
Cash expenses:			
Seed	8.47	5.49	6.10
Fertilizer	10.01	9.22	9.13
Lime and gypsum	1.42	1.71	1.79
Chemicals	1.23	1.35	1.32
Custom operations	3.01	2.56	2.42
Fuel, lube, and electricity	8.76	6.78	8.09
Repairs	6.42	7.86	7.91
Hired labor	1.51	1.89	1.94
Miscellaneous	.97	.93	.97
Technical services	.06	.07	.07
Total, variable cash expenses	41.85	37.86	39.74
General farm overhead	3.90	3.48	4.78
Taxes and insurance	13.53	15.68	16.04
Interest on operating loans	4.64	4.09	5.66
Interest on real estate	7.05	6.19	8.52
Total, fixed cash expenses	29.12	29.44	35.00
Total, cash expenses	70.97	67.30	74.74
Value of production less cash expenses (excluding direct Gov't. payments)	8.46	2.35	22.51
Capital replacement	19.17	27.25	27.37
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-10.71	-24.90	-4.86
=====			
Economic (full ownership) costs:			
Variable cash expenses	41.85	37.86	39.74
General farm overhead	3.90	3.48	4.78
Taxes and insurance	13.53	15.68	16.04
Capital replacement	19.17	27.25	27.37
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	.94	.61	.69
Return to other nonland capital <u>4/</u>	4.15	6.05	6.98
Net land return <u>5/</u>	17.46	14.69	17.55
Unpaid labor	11.03	13.87	14.21
Total, economic costs	112.04	119.49	127.36
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-32.61	-49.84	-30.11
=====			
Harvest-period price (dollars/bu.)	1.23	0.86	1.35
Yield (bu./planted acre)	45.14	57.64	55.21
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 17--Oat production costs, Lake States and Corn Belt, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	60.68	53.89	82.63
Secondary crop	34.36	28.25	34.11
Total	95.04	82.14	116.74
=====			
Cash expenses:			
Seed	9.65	6.20	7.16
Fertilizer	10.75	10.11	10.31
Lime and gypsum	1.56	1.86	1.90
Chemicals	1.17	1.39	1.35
Custom operations	3.75	3.07	2.69
Fuel, lube, and electricity	9.91	7.85	9.40
Repairs	6.52	8.06	8.09
Hired labor	1.76	2.22	2.33
Miscellaneous	1.35	1.30	1.36
Technical services	.08	.09	.09
Total, variable cash expenses	46.50	42.15	44.68
General farm overhead	4.52	3.97	5.55
Taxes and insurance	17.25	19.93	20.42
Interest on operating loans	5.96	5.25	7.32
Interest on real estate	9.34	8.21	11.47
Total, fixed cash expenses	37.07	37.36	44.76
Total, cash expenses	83.57	79.51	89.44
Value of production less cash expenses (excluding direct Gov't. payments)	11.47	2.63	27.30
Capital replacement	20.70	30.52	30.57
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-9.23	-27.89	-3.27
=====			
Economic (full ownership) costs:			
Variable cash expenses	46.50	42.15	44.68
General farm overhead	4.52	3.97	5.55
Taxes and insurance	17.25	19.93	20.42
Capital replacement	20.70	30.52	30.57
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.07	.72	.82
Return to other nonland capital <u>4/</u>	4.57	6.93	7.96
Net land return <u>5/</u>	22.09	18.28	20.82
Unpaid labor	12.89	16.28	17.11
Total, economic costs	129.59	138.78	147.93
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-34.55	-56.64	-31.19
=====			
Harvest-period price (dollars/bu.)	1.32	0.86	1.37
Yield (bu./planted acre)	45.89	62.35	60.43
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 18--Oat production costs, Northeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	85.76	53.42	73.83
Secondary crop	32.67	38.43	34.78
Total	118.43	91.85	108.61
=====			
Cash expenses:			
Seed	12.61	7.63	7.94
Fertilizer	20.09	17.63	16.82
Lime and gypsum	10.00	9.82	10.70
Chemicals	3.29	3.20	3.15
Custom operations	5.82	5.53	5.24
Fuel, lube, and electricity	12.62	8.98	9.96
Repairs	9.74	9.99	10.07
Hired labor	2.26	2.59	2.89
Miscellaneous	1.35	1.30	1.36
Technical services	.17	.16	.17
Total, variable cash expenses	77.95	66.83	68.30
General farm overhead	9.07	7.04	8.32
Taxes and insurance	18.71	21.06	21.62
Interest on operating loans	4.82	3.74	4.42
Interest on real estate	10.37	8.05	9.51
Total, fixed cash expenses	42.97	39.89	43.87
Total, cash expenses	120.92	106.72	112.17
Value of production less cash expenses (excluding direct Gov't. payments)	-2.49	-14.87	-3.56
Capital replacement	31.61	37.26	37.53
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-34.10	-52.13	-41.09
=====			
Economic (full ownership) costs:			
Variable cash expenses	77.95	66.83	68.30
General farm overhead	9.07	7.04	8.32
Taxes and insurance	18.71	21.06	21.62
Capital replacement	31.61	37.26	37.53
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.76	1.10	1.24
Return to other nonland capital <u>4/</u>	7.09	8.59	9.94
Net land return <u>5/</u>	8.76	6.61	8.05
Unpaid labor	16.54	19.02	21.22
Total, economic costs	171.48	167.51	176.22
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-53.05	-75.66	-67.61
=====			
Harvest-period price (dollars/bu.)	1.12	0.83	1.27
Yield (bu./planted acre)	76.89	64.53	58.30
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 19--Oat production costs, Northern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	44.31	42.90	63.92
Secondary crop	8.03	6.71	6.90
Total	52.34	49.61	70.82
Cash expenses:			
Seed	6.27	4.19	4.44
Fertilizer	7.53	6.54	6.26
Chemicals	1.01	.95	.96
Custom operations	1.57	1.36	1.56
Fuel, lube, and electricity	6.62	5.00	6.11
Repairs	5.81	7.20	7.30
Hired labor	1.05	1.34	1.27
Miscellaneous	.51	.50	.52
Technical services	.02	.03	.02
Total, variable cash expenses	30.39	27.11	28.43
General farm overhead	2.30	2.21	3.15
Taxes and insurance	7.66	9.27	9.55
Interest on operating loans	2.80	2.67	3.82
Interest on real estate	3.42	3.27	4.67
Total, fixed cash expenses	16.18	17.42	21.19
Total, cash expenses	46.57	44.53	49.62
Value of production less cash expenses (excluding direct Gov't. payments)	5.77	5.08	21.20
Capital replacement	15.26	21.22	21.48
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-9.49	-16.14	-0.28
Economic (full ownership) costs:			
Variable cash expenses	30.39	27.11	28.43
General farm overhead	2.30	2.21	3.15
Taxes and insurance	7.66	9.27	9.55
Capital replacement	15.26	21.22	21.48
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	.63	.38	.42
Return to other nonland capital <u>4/</u>	3.15	4.47	5.20
Net land return <u>5/</u>	12.36	11.65	15.25
Unpaid labor	7.68	9.85	9.30
Total, economic costs	79.43	86.16	92.79
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-27.09	-36.55	-21.97
Harvest-period price (dollars/bu.)	1.12	0.85	1.33
Yield (bu./planted acre)	39.56	50.37	48.14

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 20--U.S. wheat production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	93.52	66.23	75.69
Secondary crop	2.48	2.18	2.31
Total	96.00	68.41	78.00
=====			
Cash expenses:			
Seed	7.59	7.29	6.64
Fertilizer	15.09	13.29	12.07
Lime and gypsum	.82	.95	.79
Chemicals	4.26	4.30	4.15
Custom operations	3.98	3.87	3.71
Fuel, lube, and electricity	9.93	6.87	7.71
Repairs	6.56	6.42	6.55
Hired labor	2.43	2.52	2.51
Purchased irrigation water	.25	.24	.24
Technical services	.19	.19	.18
Total, variable cash expenses	51.10	45.94	44.56
General farm overhead	5.10	4.81	5.98
Taxes and insurance	7.44	7.68	7.85
Interest on operating loans	5.35	3.87	3.35
Interest on real estate	7.34	5.37	6.70
Total, fixed cash expenses	25.23	21.73	23.88
Total, cash expenses	76.33	67.67	68.44
Value of production less cash expenses (excluding direct Gov't. payments)	19.67	.74	9.56
Capital replacement	19.63	19.64	20.03
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	.04	-18.90	-10.47
=====			
Economic (full ownership) costs:			
Variable cash expenses	51.10	45.94	44.56
General farm overhead	5.10	4.81	5.98
Taxes and insurance	7.44	7.68	7.85
Capital replacement	19.63	19.64	20.03
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.11	1.37	1.40
Return to other nonland capital <u>4/</u>	3.67	3.73	4.39
Net land return <u>5/</u>	30.81	23.94	25.34
Unpaid labor	5.40	5.61	5.60
Total, economic costs	125.26	112.72	115.14
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-29.26	-44.31	-37.14
=====			
Harvest-period price (dollars/bu.)	2.98	2.30	2.39
Yield (bu./planted acre)	31.41	28.74	31.64

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 21--Wheat production costs, Central Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	98.30	63.26	76.85
Secondary crop	.58	.51	.53
Total	98.88	63.77	77.38
Cash expenses:			
Seed	6.67	6.20	5.43
Fertilizer	7.75	6.73	6.07
Lime and gypsum	3.36	4.34	3.49
Chemicals	.97	.97	.97
Custom operations	4.60	4.44	4.36
Fuel, lube, and electricity	7.51	4.65	5.79
Repairs	6.36	6.19	6.39
Hired labor	2.28	2.47	2.28
Technical services	.07	.07	.07
Total, variable cash expenses	39.57	36.06	34.85
General farm overhead	5.31	3.85	6.19
Taxes and insurance	8.57	8.66	9.00
Interest on operating loans	5.99	3.21	3.35
Interest on real estate	7.26	4.55	7.77
Total, fixed cash expenses	27.13	20.27	26.31
Total, cash expenses	66.70	56.33	61.16
Value of production less cash expenses (excluding direct Gov't. payments)	32.18	7.44	16.22
Capital replacement	18.46	18.00	18.47
Value of production less cash expenses and replacement (excluding direct Gov't. payments)	13.72	-10.56	-2.25
Economic (full ownership) costs:			
Variable cash expenses	39.57	36.06	34.85
General farm overhead	5.31	3.85	6.19
Taxes and insurance	8.57	8.66	9.00
Capital replacement	18.46	18.00	18.47
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.96	1.30	1.33
Return to other nonland capital <u>4/</u>	3.54	3.52	4.19
Net land return <u>5/</u>	24.10	15.20	18.17
Unpaid labor	5.09	5.51	5.09
Total, economic costs	106.60	92.10	97.29
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-7.72	-28.33	-19.91
Harvest-period price (dollars/bu.)	2.81	2.13	2.26
Yield (bu./planted acre)	35.01	29.69	33.98

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 22--Wheat production costs, North-Central, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	127.95	69.28	113.55
Secondary crop	16.65	13.52	16.75
Total	144.60	82.80	130.30
Cash expenses:			
Seed	12.27	11.86	10.40
Fertilizer	26.61	25.01	23.75
Lime and gypsum	.36	.39	.35
Chemicals	1.36	1.47	1.49
Custom operations	1.75	1.75	1.75
Fuel, lube, and electricity	8.49	4.85	6.54
Repairs	5.63	4.73	5.59
Hired labor	3.13	2.97	3.39
Technical services	.04	.04	.02
Total, variable cash expenses	59.63	53.07	53.27
General farm overhead	5.36	3.96	7.78
Taxes and insurance	11.70	11.97	12.65
Interest on operating loans	6.46	3.31	4.52
Interest on real estate	10.63	6.52	9.79
Total, fixed cash expenses	34.15	25.76	34.74
Total, cash expenses	93.78	78.83	88.01
Value of production less cash expenses (excluding direct Gov't. payments)	50.82	3.97	42.29
Capital replacement	22.63	19.24	21.81
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	28.19	-15.27	20.48
Economic (full ownership) costs:			
Variable cash expenses	59.63	53.07	53.27
General farm overhead	5.36	3.96	7.78
Taxes and insurance	11.70	11.97	12.65
Capital replacement	22.63	19.24	21.81
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.12	2.12	2.22
Return to other nonland capital <u>4/</u>	4.24	3.68	4.88
Net land return <u>5/</u>	50.43	29.26	44.23
Unpaid labor	6.95	6.62	7.53
Total, economic costs	164.07	129.92	154.38
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-19.47	-47.12	-24.08
Harvest-period price (dollars/bu.)	2.89	2.29	2.37
Yield (bu./planted acre)	44.34	30.29	47.96

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 23--Wheat production costs, Northeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	146.17	117.68	104.50
Secondary crop	83.88	82.74	95.48
Total	230.05	200.42	199.98
Cash expenses:			
Seed	18.78	15.20	18.03
Fertilizer	33.64	29.55	26.31
Lime and gypsum	10.96	10.68	10.40
Chemicals	5.74	5.70	6.42
Custom operations	4.38	4.38	4.38
Fuel, lube, and electricity	11.46	7.75	8.39
Repairs	7.75	7.61	7.61
Hired labor	3.71	4.03	4.57
Total, variable cash expenses	96.42	84.90	86.11
General farm overhead	17.62	29.92	25.92
Taxes and insurance	20.81	21.89	22.52
Interest on operating loans	9.36	4.41	9.76
Interest on real estate	20.15	21.14	20.16
Total, fixed cash expenses	67.94	77.36	78.36
Total, cash expenses	164.36	162.26	164.47
Value of production less cash expenses (excluding direct Gov't. payments)	65.69	38.16	35.51
Capital replacement	30.48	30.34	30.10
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	35.21	7.82	5.41
Economic (full ownership) costs:			
Variable cash expenses	96.42	84.90	86.11
General farm overhead	17.62	29.92	25.92
Taxes and insurance	20.81	21.89	22.52
Capital replacement	30.48	30.34	30.10
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.43	3.43	3.73
Return to other nonland capital <u>4/</u>	5.73	5.84	6.69
Net land return <u>5/</u>	33.57	26.94	30.53
Unpaid labor	8.26	8.96	10.16
Total, economic costs	218.32	212.22	215.76
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	11.73	-11.80	-15.78
Harvest-period price (dollars/bu.)	2.96	2.69	2.50
Yield (bu./planted acre)	49.31	43.74	41.84

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 24--Wheat production costs, Northern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	86.36	67.61	74.32
Secondary crop	1.95	1.41	1.55
Total	88.31	69.02	75.87
Cash expenses:			
Seed	6.86	6.62	5.82
Fertilizer	11.97	10.30	9.48
Chemicals	4.40	4.39	4.39
Custom operations	3.24	3.46	3.43
Fuel, lube, and electricity	6.63	4.15	5.01
Repairs	5.79	6.01	6.09
Hired labor	1.80	2.00	1.93
Technical services	.04	.04	.04
Total, variable cash expenses	40.73	36.97	36.19
General farm overhead	4.27	3.62	6.14
Taxes and insurance	6.63	7.15	7.32
Interest on operating loans	5.26	4.28	3.32
Interest on real estate	6.85	5.47	7.56
Total, fixed cash expenses	23.01	20.52	24.34
Total, cash expenses	63.74	57.49	60.53
Value of production less cash expenses (excluding direct Gov't. payments)	24.57	11.53	15.34
Capital replacement	19.77	21.14	21.47
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	4.80	-9.61	-6.13
Economic (full ownership) costs:			
Variable cash expenses	40.73	36.97	36.19
General farm overhead	4.27	3.62	6.14
Taxes and insurance	6.63	7.15	7.32
Capital replacement	19.77	21.14	21.47
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	.90	.56	.59
Return to other nonland capital <u>4/</u>	3.70	4.04	4.71
Net land return <u>5/</u>	30.96	28.31	27.88
Unpaid labor	4.02	4.46	4.31
Total, economic costs	110.98	106.25	108.61
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-22.67	-37.23	-32.74
Harvest-period price (dollars/bu.)	3.03	2.28	2.41
Yield (bu./planted acre)	28.49	29.69	30.81

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 25--Wheat production costs, Northwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	146.65	122.12	152.33
Secondary crop	.94	.89	.82
Total	147.59	123.01	153.15
Cash expenses:			
Seed	9.36	8.83	8.29
Fertilizer	22.61	20.15	19.29
Chemicals	10.03	10.07	10.08
Custom operations	2.69	2.73	2.69
Fuel, lube, and electricity	14.43	11.94	13.31
Repairs	10.71	10.80	11.39
Hired labor	3.23	3.43	3.78
Purchased irrigation water	1.91	1.85	1.86
Technical services	.35	.34	.34
Total, variable cash expenses	75.32	70.13	71.03
General farm overhead	11.02	10.77	13.31
Taxes and insurance	10.12	10.65	11.20
Interest on operating loans	8.53	7.85	5.86
Interest on real estate	16.95	12.72	13.36
Total, fixed cash expenses	46.62	41.99	43.73
Total, cash expenses	121.94	112.12	114.76
Value of production less cash expenses (excluding direct Gov't. payments)	25.65	10.89	38.39
Capital replacement	26.10	26.45	27.96
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-.45	-15.56	10.43
Economic (full ownership) costs:			
Variable cash expenses	75.32	70.13	71.03
General farm overhead	11.02	10.77	13.31
Taxes and insurance	10.12	10.65	11.20
Capital replacement	26.10	26.45	27.96
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.86	2.57	2.76
Return to other nonland capital <u>4/</u>	4.76	4.97	6.08
Net land return <u>5/</u>	52.47	43.21	51.03
Unpaid labor	7.18	7.62	8.41
Total, economic costs	190.83	176.38	191.78
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-43.24	-53.37	-38.63
Harvest-period price (dollars/bu.)	3.14	2.41	2.50
Yield (bu./planted acre)	46.69	50.69	60.82

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 26--Wheat production costs, Southeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	79.45	67.63	79.56
Secondary crop	1.83	1.37	1.48
Total	81.28	69.00	81.04
=====			
Cash expenses:			
Seed	11.75	10.61	10.00
Fertilizer	32.40	28.79	27.02
Lime and gypsum	1.22	.99	.93
Chemicals	1.95	1.83	1.74
Custom operations	4.23	3.32	2.99
Fuel, lube, and electricity	7.70	4.55	5.82
Repairs	6.30	5.98	6.25
Hired labor	2.60	2.59	2.70
Technical services	.01	.01	.01
Total, variable cash expenses	68.15	58.67	57.46
General farm overhead	3.39	4.01	4.63
Taxes and insurance	7.32	7.21	7.48
Interest on operating loans	3.11	3.44	3.11
Interest on real estate	5.72	4.11	4.22
Total, fixed cash expenses	19.54	18.77	19.44
Total, cash expenses	87.69	77.44	76.90
Value of production less cash expenses (excluding direct Gov't. payments)	-6.41	-8.44	4.14
Capital replacement	17.60	17.53	18.21
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-24.01	-25.97	-14.07
=====			
Economic (full ownership) costs:			
Variable cash expenses	68.15	58.67	57.46
General farm overhead	3.39	4.01	4.63
Taxes and insurance	7.32	7.21	7.48
Capital replacement	17.60	17.53	18.21
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.04	1.90	1.99
Return to other nonland capital <u>4/</u>	3.10	3.14	3.78
Net land return <u>5/</u>	21.13	20.54	19.91
Unpaid labor	5.77	5.77	6.00
Total, economic costs	129.51	118.77	119.46
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-48.23	-49.77	-38.42
=====			
Harvest-period price (dollars/bu.)	2.97	2.47	2.47
Yield (bu./planted acre)	26.79	27.33	32.19

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 27--Wheat production costs, Southern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	65.97	39.45	38.17
Secondary crop	.10	.09	.12
Total	66.07	39.54	38.29
=====			
Cash expenses:			
Seed	5.40	5.73	5.61
Fertilizer	13.44	11.87	10.25
Chemicals	5.77	5.88	5.56
Custom operations	4.29	4.11	3.74
Fuel, lube, and electricity	14.53	10.71	11.23
Repairs	6.45	6.15	6.09
Hired labor	2.51	2.49	2.55
Technical services	.47	.48	.45
Total, variable cash expenses	52.85	47.42	45.48
General farm overhead	3.38	3.58	2.55
Taxes and insurance	4.85	4.86	4.97
Interest on operating loans	3.71	3.09	2.17
Interest on real estate	2.78	2.82	2.14
Total, fixed cash expenses	14.72	14.35	11.83
Total, cash expenses	67.57	61.77	57.31
Value of production less cash expenses (excluding direct Gov't. payments)	-1.50	-22.23	-19.02
Capital replacement	17.58	16.85	16.62
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-19.08	-39.08	-35.64
=====			
Economic (full ownership) costs:			
Variable cash expenses	52.85	47.42	45.48
General farm overhead	3.38	3.58	2.55
Taxes and insurance	4.85	4.86	4.97
Capital replacement	17.58	16.85	16.62
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.50	1.63	1.70
Return to other nonland capital <u>4/</u>	3.27	3.14	3.55
Net land return <u>5/</u>	22.03	14.45	13.68
Unpaid labor	5.57	5.54	5.67
Total, economic costs	112.04	97.47	94.22
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-45.97	-57.93	-55.93
=====			
Harvest-period price (dollars/bu.)	2.94	2.28	2.32
Yield (bu./planted acre)	22.41	17.30	16.46
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 28--Wheat production costs, Southwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	266.55	207.00	201.49
Secondary crop	.91	.73	.66
Total	267.46	207.73	202.15
Cash expenses:			
Seed	17.40	16.58	17.23
Fertilizer	21.40	19.93	18.16
Chemicals	10.24	10.22	10.18
Custom operations	21.78	21.63	21.09
Fuel, lube, and electricity	29.01	25.77	28.07
Repairs	9.66	9.72	9.99
Hired labor	8.11	8.40	8.70
Purchased irrigation water	7.52	7.27	7.32
Technical services	1.02	1.02	1.00
Total, variable cash expenses	126.14	120.54	121.74
General farm overhead	19.81	18.46	17.41
Taxes and insurance	17.22	17.45	17.67
Interest on operating loans	14.45	13.96	7.26
Interest on real estate	31.81	21.67	14.92
Total, fixed cash expenses	83.29	71.54	57.26
Total, cash expenses	209.43	192.08	179.00
Value of production less cash expenses (excluding direct Gov't. payments)	58.03	15.65	23.15
Capital replacement	24.57	24.61	24.89
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	33.46	-8.96	-1.74
Economic (full ownership) costs:			
Variable cash expenses	126.14	120.54	121.74
General farm overhead	19.81	18.46	17.41
Taxes and insurance	17.22	17.45	17.67
Capital replacement	24.57	24.61	24.89
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.48	3.06	3.37
Return to other nonland capital <u>4/</u>	4.98	5.12	5.93
Net land return <u>5/</u>	108.97	90.03	92.60
Unpaid labor	18.05	18.70	19.36
Total, economic costs	324.22	297.97	302.97
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-56.76	-90.24	-100.82
Harvest-period price (dollars/bu.)	3.38	2.85	2.77
Yield (bu./planted acre)	78.74	72.72	72.85

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 29--U.S. rice production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	430.71	218.41	263.89
Total	430.71	218.41	263.89
=====			
Cash expenses:			
Seed	24.21	25.00	24.22
Fertilizer	34.06	31.16	25.99
Chemicals <u>3/</u>	5.69	6.56	5.14
Custom operations	47.81	50.40	45.78
Fuel, lube, and electricity	44.56	30.96	35.96
Repairs	28.72	28.86	28.77
Hired labor	26.09	27.03	27.87
Purchased irrigation water	20.29	19.52	20.45
Drying	34.67	35.91	34.57
Technical services	5.31	5.26	5.27
Total, variable cash expenses	271.41	260.66	254.02
General farm overhead	26.08	18.21	17.38
Taxes and insurance	13.21	14.29	14.23
Interest on operating loans	25.20	14.05	12.97
Interest on real estate	27.20	15.42	12.67
Total, fixed cash expenses	91.69	61.97	57.25
Total, cash expenses	363.10	322.63	311.27
Value of production less cash expenses (excluding direct Gov't. payments)	67.61	-104.22	-47.38
Capital replacement	51.44	51.55	51.39
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	16.17	-155.77	-98.77
=====			
Economic (full ownership) costs:			
Variable cash expenses	271.41	260.66	254.02
General farm overhead	26.08	18.21	17.38
Taxes and insurance	13.21	14.29	14.23
Capital replacement	51.44	51.55	51.39
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	6.18	4.31	4.48
Return to other nonland capital <u>5/</u>	10.03	10.50	11.68
Net land return <u>6/</u>	75.74	29.16	40.36
Unpaid labor	18.13	18.79	19.36
Total, economic costs	472.21	407.47	412.90
Residual returns to management and risk <u>7/</u> (excluding direct Gov't. payments)	-41.50	-189.06	-149.01
=====			
Harvest-period price (dollars/cwt.)	8.01	3.83	4.83
Yield (cwt./planted acre)	53.78	56.97	54.67

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Costs of chemicals custom-applied to rice are included under custom operations. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 7/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 30--Rice production costs, Arkansas (non-Delta), 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	445.69	208.77	263.69
Total	445.69	208.77	263.69
Cash expenses:			
Seed	21.78	22.48	21.79
Fertilizer	27.11	24.09	20.18
Chemicals <u>3/</u>	1.21	.95	1.20
Custom operations	36.51	38.84	35.56
Fuel, lube, and electricity	54.54	36.35	44.10
Repairs	33.08	35.85	32.03
Hired labor	26.85	27.14	27.84
Drying	23.31	20.99	23.17
Technical services	5.28	5.17	5.28
Total, variable cash expenses	229.67	211.86	211.15
General farm overhead	26.25	16.41	15.77
Taxes and insurance	12.16	13.50	12.90
Interest on operating loans	27.45	12.03	13.84
Interest on real estate	22.42	11.96	11.52
Total, fixed cash expenses	88.28	53.90	54.03
Total, cash expenses	317.95	265.76	265.18
Value of production less cash expenses (excluding direct Gov't. payments)	127.74	-56.99	-1.49
Capital replacement	57.58	60.83	56.38
Value of production less cash expenses and replacement (excluding direct Gov't. payments)	70.16	-117.82	-57.87
Economic (full ownership) costs:			
Variable cash expenses	229.67	211.86	211.15
General farm overhead	26.25	16.41	15.77
Taxes and insurance	12.16	13.50	12.90
Capital replacement	57.58	60.83	56.38
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.33	3.71	3.79
Return to other nonland capital <u>5/</u>	10.72	11.73	12.32
Net land return <u>6/</u>	94.90	34.84	47.57
Unpaid labor	18.66	18.86	19.35
Total, economic costs	455.27	371.74	379.23
Residual returns to management and risk <u>7/</u> (excluding direct Gov't. payments)	-9.58	-162.97	-115.54
Harvest-period price (dollars/cwt.)	8.57	3.87	4.92
Yield (cwt./planted acre)	52.01	53.95	53.60

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Costs of chemicals custom-applied to rice are included under custom operations. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 7/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 31--Rice production costs, California, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	531.88	281.84	316.19
Total	531.88	281.84	316.19
Cash expenses:			
Seed	26.56	26.56	26.56
Fertilizer	34.70	32.93	29.93
Chemicals <u>3/</u>	6.00	6.00	6.00
Custom operations	57.77	57.80	56.04
Fuel, lube, and electricity	32.28	22.76	25.56
Repairs	34.53	35.36	34.43
Hired labor	32.65	34.07	35.02
Purchased irrigation water	24.63	23.70	24.83
Drying	47.33	47.51	47.51
Technical services	8.28	8.28	8.28
Total, variable cash expenses	304.73	294.97	294.16
General farm overhead	39.09	25.53	26.97
Taxes and insurance	22.78	23.86	24.08
Interest on operating loans	26.86	20.15	10.53
Interest on real estate	65.26	29.71	18.75
Total, fixed cash expenses	153.99	99.25	80.33
Total, cash expenses	458.72	394.22	374.49
Value of production less cash expenses (excluding direct Gov't. payments)	73.16	-112.38	-58.30
Capital replacement	64.34	65.57	64.28
Value of production less cash expenses and replacement (excluding direct Gov't. payments)	8.82	-177.95	-122.58
Economic (full ownership) costs:			
Variable cash expenses	304.73	294.97	294.16
General farm overhead	39.09	25.53	26.97
Taxes and insurance	22.78	23.86	24.08
Capital replacement	64.34	65.57	64.28
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	7.93	5.49	5.92
Return to other nonland capital <u>5/</u>	11.97	12.61	14.09
Net land return <u>6/</u>	108.62	49.70	59.13
Unpaid labor	22.68	23.68	24.34
Total, economic costs	582.14	501.41	512.97
Residual returns to management and risk <u>7/</u> (excluding direct Gov't. payments)	-50.26	-219.57	-196.78
Harvest-period price (dollars/cwt.)	7.38	3.69	4.49
Yield (cwt./planted acre)	72.07	76.38	70.42

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Costs of chemicals custom-applied to rice are included under custom operations. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 7/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 32--Rice production costs, Delta, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	396.26	202.77	239.94
Total	396.26	202.77	239.94
Cash expenses:			
Seed	23.48	23.48	23.48
Fertilizer	37.62	33.08	27.65
Chemicals <u>3/</u>	12.87	12.87	12.87
Custom operations	50.40	50.47	49.01
Fuel, lube, and electricity	48.54	38.42	41.88
Repairs	22.87	23.17	22.40
Hired labor	20.42	21.79	21.09
Drying	30.58	30.77	30.48
Technical services	5.54	5.54	5.54
Total, variable cash expenses	252.32	239.59	234.40
General farm overhead	23.34	15.94	14.35
Taxes and insurance	11.35	12.18	12.09
Interest on operating loans	24.41	11.68	12.60
Interest on real estate	19.93	11.62	10.49
Total, fixed cash expenses	79.03	51.42	49.53
Total, cash expenses	331.35	291.01	283.93
Value of production less cash expenses (excluding direct Gov't. payments)	64.91	-88.24	-43.99
Capital replacement	46.38	46.83	45.78
Value of production less cash expenses and replacement (excluding direct Gov't. payments)	18.53	-135.07	-89.77
Economic (full ownership) costs:			
Variable cash expenses	252.32	239.59	234.40
General farm overhead	23.34	15.94	14.35
Taxes and insurance	11.35	12.18	12.09
Capital replacement	46.38	46.83	45.78
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.34	3.60	3.80
Return to other nonland capital <u>5/</u>	9.96	10.39	11.48
Net land return <u>6/</u>	50.89	20.91	23.49
Unpaid labor	14.19	15.14	14.65
Total, economic costs	413.77	364.58	360.04
Residual returns to management and risk <u>7/</u> (excluding direct Gov't. payments)	-17.51	-161.81	-120.10
Harvest-period price (dollars/cwt.)	7.90	3.91	4.98
Yield (cwt./planted acre)	50.16	51.86	48.18

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Costs of chemicals custom-applied to rice are included under custom operations. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 7/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 33--Rice production costs, Gulf Coast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	384.13	203.13	247.68
Total	384.13	203.13	247.68
=====			
Cash expenses:			
Seed	26.35	27.17	26.37
Fertilizer	38.74	32.99	29.90
Chemicals <u>3/</u>	4.52	4.64	4.74
Custom operations	53.02	53.71	50.50
Fuel, lube, and electricity	36.49	25.12	28.21
Repairs	25.29	25.89	25.23
Hired labor	26.31	27.88	27.87
Purchased irrigation water	54.65	52.58	55.09
Drying	44.24	43.89	43.78
Technical services	3.40	3.32	3.25
Total, variable cash expenses	313.01	297.19	294.94
General farm overhead	20.68	17.34	15.55
Taxes and insurance	10.49	11.32	11.32
Interest on operating loans	22.26	14.13	13.58
Interest on real estate	16.96	13.08	11.83
Total, fixed cash expenses	70.39	55.87	52.28
Total, cash expenses	383.40	353.06	347.22
Value of production less cash expenses (excluding direct Gov't. payments)	.73	-149.93	-99.54
Capital replacement	41.09	41.89	40.82
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-40.36	-191.82	-140.36
=====			
Economic (full ownership) costs:			
Variable cash expenses	313.01	297.19	294.94
General farm overhead	20.68	17.34	15.55
Taxes and insurance	10.49	11.32	11.32
Capital replacement	41.09	41.89	40.82
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	6.90	4.71	4.92
Return to other nonland capital <u>5/</u>	8.13	8.59	9.54
Net land return <u>6/</u>	55.72	21.44	30.54
Unpaid labor	18.29	19.37	19.36
Total, economic costs	474.31	421.85	426.99
Residual returns to management and risk <u>7/</u> (excluding direct Gov't. payments)	-90.18	-218.72	-179.31
=====			
Harvest-period price (dollars/cwt.)	7.94	3.86	4.89
Yield (cwt./planted acre)	48.36	52.65	50.63
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Costs of chemicals custom-applied to rice are included under custom operations. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 7/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 34--U.S. soybean production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	165.96	150.64	172.81
Total	165.96	150.64	172.81
Cash expenses:			
Seed	12.92	10.82	12.03
Fertilizer	5.80	5.01	4.99
Lime and gypsum	.38	.34	.29
Chemicals	12.41	12.37	12.34
Custom operations	4.01	4.01	3.86
Fuel, lube, and electricity	11.62	7.37	9.06
Repairs	7.04	6.79	6.86
Hired labor	2.45	2.53	2.62
Technical services	.05	.05	.05
Total, variable cash expenses	56.68	49.29	52.10
General farm overhead	6.85	7.87	10.87
Taxes and insurance	12.85	13.23	13.71
Interest on operating loans	7.94	6.79	6.51
Interest on real estate	12.38	11.37	12.63
Total, fixed cash expenses	40.02	39.26	43.72
Total, cash expenses	96.70	88.55	95.82
Value of production less cash expenses	69.26	62.09	76.99
Capital replacement	29.60	29.46	29.74
Value of production less cash expenses and capital replacement	39.66	32.63	47.25
Economic (full ownership) costs:			
Variable cash expenses	56.68	49.29	52.10
General farm overhead	6.85	7.87	10.87
Taxes and insurance	12.85	13.23	13.71
Capital replacement	29.60	29.46	29.74
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.72	1.09	1.23
Return to other nonland capital <u>4/</u>	4.99	5.08	5.90
Net land return <u>5/</u>	48.16	43.64	45.78
Unpaid labor	9.22	9.53	9.86
Total, economic costs	170.07	159.20	169.19
Residual returns to management and risk <u>6/</u>	-4.11	-8.56	3.62
Harvest-period price (dollars/bu.)	4.86	4.57	5.06
Yield (bu./planted acre)	34.17	32.94	34.15

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 35--Soybean production costs, Delta, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	121.93	88.26	113.53
Total	121.93	88.26	113.53
Cash expenses:			
Seed	11.37	9.31	10.96
Fertilizer	6.84	6.06	6.04
Chemicals	8.54	8.53	8.51
Custom operations	2.28	2.30	2.29
Fuel, lube, and electricity	12.58	7.40	9.62
Repairs	7.47	6.95	7.25
Hired labor	2.45	2.49	2.54
Technical services	.05	.05	.05
Total, variable cash expenses	51.58	43.09	47.26
General farm overhead	7.18	6.94	6.79
Taxes and insurance	7.67	7.70	8.06
Interest on operating loans	7.51	5.08	5.96
Interest on real estate	6.13	5.06	4.96
Total, fixed cash expenses	28.49	24.78	25.77
Total, cash expenses	80.07	67.87	73.03
Value of production less cash expenses	41.86	20.39	40.50
Capital replacement	27.80	26.67	27.34
Value of production less cash expenses and capital replacement	14.06	-6.28	13.16
Economic (full ownership) costs:			
Variable cash expenses	51.58	43.09	47.26
General farm overhead	7.18	6.94	6.79
Taxes and insurance	7.67	7.70	8.06
Capital replacement	27.80	26.67	27.34
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.74	1.08	1.26
Return to other nonland capital <u>4/</u>	4.87	4.70	5.60
Net land return <u>5/</u>	26.03	20.05	23.09
Unpaid labor	9.20	9.38	9.55
Total, economic costs	136.07	119.61	128.95
Residual returns to management and risk <u>6/</u>	-14.14	-31.35	-15.42
Harvest-period price (dollars/bu.)	4.98	4.88	5.43
Yield (bu./planted acre)	24.47	18.10	20.91

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 36--Soybean production costs, North-Central, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	183.50	170.43	190.06
Total	183.50	170.43	190.06
=====			
Cash expenses:			
Seed	13.82	11.27	12.48
Fertilizer	4.34	3.90	4.00
Lime and gypsum	.14	.14	.14
Chemicals	12.90	12.90	12.90
Custom operations	4.06	4.11	3.96
Fuel, lube, and electricity	11.35	7.42	8.96
Repairs	6.53	6.52	6.52
Hired labor	2.38	2.50	2.59
Technical services	.05	.05	.05
Total, variable cash expenses	55.57	48.81	51.59
General farm overhead	7.21	8.59	12.15
Taxes and insurance	15.19	15.40	15.74
Interest on operating loans	8.88	7.46	6.95
Interest on real estate	14.21	13.50	14.80
Total, fixed cash expenses	45.49	44.95	49.64
Total, cash expenses	101.06	93.76	101.23
Value of production less cash expenses	82.44	76.67	88.83
Capital replacement	31.01	31.05	30.98
Value of production less cash expenses and capital replacement	51.43	45.62	57.85
=====			
Economic (full ownership) costs:			
Variable cash expenses	55.57	48.81	51.59
General farm overhead	7.21	8.59	12.15
Taxes and insurance	15.19	15.40	15.74
Capital replacement	31.01	31.05	30.98
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.63	1.03	1.17
Return to other nonland capital <u>4/</u>	5.18	5.33	6.10
Net land return <u>5/</u>	57.62	51.82	53.10
Unpaid labor	8.96	9.41	9.73
Total, economic costs	182.37	171.44	180.56
Residual returns to management and risk <u>6/</u>	1.13	-1.01	9.50
=====			
Harvest-period price (dollars/bu.)	4.83	4.52	4.99
Yield (bu./planted acre)	38.01	37.74	38.08
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 37--Soybean production costs, Southeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	126.71	107.55	133.74
Total	126.71	107.55	133.74
Cash expenses:			
Seed	10.11	9.90	10.28
Fertilizer	12.20	10.70	10.62
Lime and gypsum	2.06	1.96	1.83
Chemicals	14.40	14.04	13.86
Custom operations	5.79	5.65	5.52
Fuel, lube, and electricity	11.87	6.96	8.95
Repairs	9.15	8.27	8.74
Hired labor	2.81	2.79	3.01
Total, variable cash expenses	68.39	60.27	62.81
General farm overhead	4.54	4.58	7.51
Taxes and insurance	6.74	6.82	7.15
Interest on operating loans	3.53	4.80	4.07
Interest on real estate	10.22	6.24	8.02
Total, fixed cash expenses	25.03	22.44	26.75
Total, cash expenses	93.42	82.71	89.56
Value of production less cash expenses	33.29	24.84	44.18
Capital replacement	24.36	23.11	24.23
Value of production less cash expenses and capital replacement	8.93	1.73	19.95
Economic (full ownership) costs:			
Variable cash expenses	68.39	60.27	62.81
General farm overhead	4.54	4.58	7.51
Taxes and insurance	6.74	6.82	7.15
Capital replacement	24.36	23.11	24.23
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	2.18	1.43	1.57
Return to other nonland capital <u>4/</u>	4.20	4.03	4.88
Net land return <u>5/</u>	25.04	23.00	25.59
Unpaid labor	10.56	10.51	11.31
Total, economic costs	146.01	133.75	145.05
Residual returns to management and risk <u>6/</u>	-19.30	-26.20	-11.31
Harvest-period price (dollars/bu.)	4.93	4.86	5.38
Yield (bu./planted acre)	25.70	22.13	24.87

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 38--U.S. sunflower production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	108.11	97.72	98.37
Total	108.11	97.72	98.37
=====			
Cash expenses:			
Seed	11.38	12.86	12.79
Fertilizer	9.90	8.49	7.23
Chemicals	8.53	8.47	8.64
Custom operations	2.62	2.62	2.66
Fuel, lube, and electricity	7.36	4.43	5.36
Repairs	5.35	5.59	5.61
Hired labor	1.21	1.33	1.25
Drying	2.13	2.68	2.88
Technical services	.35	.34	.34
Total, variable cash expenses	48.83	46.81	46.76
General farm overhead	4.72	5.22	7.55
Taxes and insurance	6.24	6.59	6.65
Interest on operating loans	5.88	5.22	4.08
Interest on real estate	7.38	6.13	8.29
Total, fixed cash expenses	24.22	23.16	26.57
Total, cash expenses	73.05	69.97	73.33
Value of production less cash expenses	35.06	27.75	25.04
Capital replacement	18.31	18.71	18.59
Value of production less			
cash expenses and capital replacement	16.75	9.04	6.45
=====			
Economic (full ownership) costs:			
Variable cash expenses	48.83	46.81	46.76
General farm overhead	4.72	5.22	7.55
Taxes and insurance	6.24	6.59	6.65
Capital replacement	18.31	18.71	18.59
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.41	.95	1.01
Return to other nonland capital <u>4/</u>	3.32	3.56	4.07
Net land return <u>5/</u>	29.74	26.66	25.49
Unpaid labor	5.16	5.65	5.34
Total, economic costs	117.73	114.15	115.46
Residual returns to management and risk <u>6/</u>	-9.62	-16.43	-17.09
=====			
Harvest-period price (dollars/cwt.)	10.54	7.39	6.80
Yield (cwt./planted acre)	10.26	13.23	14.47
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 39--U.S. peanut production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	621.19	662.30	615.90
Secondary crop	16.81	15.02	15.33
Total	638.00	677.32	631.23
Cash expenses:			
Seed	59.60	65.36	82.03
Fertilizer	18.68	17.22	17.05
Lime and gypsum	14.98	14.96	14.36
Chemicals	91.57	92.35	89.13
Custom operations	6.49	6.31	6.26
Fuel, lube, and electricity	30.65	20.13	24.54
Repairs	17.28	17.11	17.33
Hired labor	15.73	16.68	17.63
Drying	39.05	35.61	33.93
Miscellaneous	.20	.19	.20
Technical services	.86	.91	.89
Total, variable cash expenses	295.10	286.84	303.35
General farm overhead	24.31	38.05	35.36
Taxes and insurance	10.33	11.10	11.33
Interest on operating loans	24.68	34.74	22.42
Interest on real estate	41.31	45.64	30.27
Total, fixed cash expenses	100.63	129.53	99.38
Total, cash expenses	395.73	416.37	402.73
Value of production less cash expenses	242.27	260.95	228.50
Capital replacement	43.05	43.67	43.52
Value of production less cash expenses and capital replacement	199.22	217.28	184.98
Economic (full ownership) costs:			
Variable cash expenses	295.10	286.84	303.35
General farm overhead	24.31	38.05	35.36
Taxes and insurance	10.33	11.10	11.33
Capital replacement	43.05	43.67	43.52
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	8.37	5.95	6.90
Return to other nonland capital <u>4/</u>	8.06	8.40	9.62
Net land return <u>5/</u>	84.07	88.47	78.50
Unpaid labor	17.05	18.07	19.09
Total, economic costs	490.33	500.55	507.67
Residual returns to management and risk <u>6/</u>	147.67	176.77	123.56
Harvest-period price (dollars/lb.)	.22	.28	.27
Yield (lbs./planted acre)	2,771.74	2,354.11	2,281.48

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 40--Peanut production costs, Southeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	662.70	659.90	638.94
Secondary crop	17.08	13.91	14.89
Total	679.78	673.81	653.83
=====			
Cash expenses:			
Seed	61.54	69.57	89.16
Fertilizer	21.10	19.25	19.33
Lime and gypsum	18.47	17.71	17.29
Chemicals	108.82	107.94	105.21
Custom operations	5.45	5.49	5.43
Fuel, lube, and electricity	25.29	15.95	20.85
Repairs	15.14	15.28	15.30
Hired labor	13.87	15.21	15.98
Drying	40.50	32.75	32.66
Miscellaneous	.27	.26	.27
Technical services	1.17	1.18	1.17
Total, variable cash expenses	311.62	300.59	322.65
General farm overhead	24.20	34.57	34.78
Taxes and insurance	10.16	11.06	11.18
Interest on operating loans	26.65	30.73	20.33
Interest on real estate	43.91	47.37	27.79
Total, fixed cash expenses	104.92	123.73	94.08
Total, cash expenses	416.54	424.32	416.73
Value of production less cash expenses	263.24	249.49	237.10
Capital replacement	41.69	42.87	42.15
Value of production less cash expenses and capital replacement	221.55	206.62	194.95
=====			
Economic (full ownership) costs:			
Variable cash expenses	311.62	300.59	322.65
General farm overhead	24.20	34.57	34.78
Taxes and insurance	10.16	11.06	11.18
Capital replacement	41.69	42.87	42.15
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	9.34	6.63	7.78
Return to other nonland capital <u>4/</u>	7.65	8.09	9.13
Net land return <u>5/</u>	78.84	75.90	70.25
Unpaid labor	15.03	16.47	17.31
Total, economic costs	498.53	496.18	515.23
Residual returns to management and risk <u>6/</u>	181.25	177.63	138.60
=====			
Harvest-period price (dollars/lb.)	.21	.28	.27
Yield (lbs./planted acre)	3,132.36	2,384.52	2,387.73
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 41--Peanut production costs, Southern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	464.12	545.46	481.72
Secondary crop	18.71	18.52	19.19
Total	482.83	563.98	500.91
=====			
Cash expenses:			
Seed	42.87	45.07	57.49
Fertilizer	20.02	17.93	17.15
Lime and gypsum	.50	.56	.63
Chemicals	38.77	38.43	37.43
Custom operations	7.63	7.14	7.13
Fuel, lube, and electricity	48.61	36.59	39.05
Repairs	24.50	24.20	24.57
Hired labor	20.12	20.92	21.74
Drying	19.27	20.01	20.43
Miscellaneous	.01	.01	.01
Technical services	.64	.62	.62
Total, variable cash expenses	222.94	211.48	226.25
General farm overhead	23.95	51.32	32.81
Taxes and insurance	11.00	11.64	12.12
Interest on operating loans	26.51	44.84	28.55
Interest on real estate	18.83	39.65	25.80
Total, fixed cash expenses	80.29	147.45	99.28
Total, cash expenses	303.23	358.93	325.53
Value of production less cash expenses	179.60	205.05	175.38
Capital replacement	56.18	55.77	56.68
Value of production less cash expenses and capital replacement	123.42	149.28	118.70
=====			
Economic (full ownership) costs:			
Variable cash expenses	222.94	211.48	226.25
General farm overhead	23.95	51.32	32.81
Taxes and insurance	11.00	11.64	12.12
Capital replacement	56.18	55.77	56.68
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.39	3.67	4.27
Return to other nonland capital <u>4/</u>	10.22	10.52	12.29
Net land return <u>5/</u>	80.73	89.82	76.94
Unpaid labor	21.79	22.66	23.55
Total, economic costs	432.20	456.88	444.91
Residual returns to management and risk <u>6/</u>	50.63	107.10	56.00
=====			
Harvest-period price (dollars/lb.)	.26	.31	.27
Yield (lbs./planted acre)	1,791.96	1,752.31	1,786.79
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 42--Peanut production costs, Virginia and
North Carolina, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	686.76	834.74	714.49
Secondary crop	13.32	14.84	11.63
Total	700.08	849.58	726.12
=====			
Cash expenses:			
Seed	75.22	75.74	88.59
Fertilizer	8.50	7.69	7.86
Lime and gypsum	22.19	23.32	22.24
Chemicals	102.11	101.22	98.71
Custom operations	8.56	8.54	8.38
Fuel, lube, and electricity	25.29	14.95	18.59
Repairs	15.07	15.04	15.10
Hired labor	16.36	17.05	18.29
Drying	60.49	69.39	57.94
Miscellaneous	.22	.21	.22
Technical services	.13	.13	.13
Total, variable cash expenses	334.14	333.28	336.06
General farm overhead	25.20	34.32	41.24
Taxes and insurance	10.02	10.51	10.81
Interest on operating loans	15.40	37.72	22.00
Interest on real estate	62.31	46.64	46.33
Total, fixed cash expenses	112.93	129.19	120.38
Total, cash expenses	447.07	462.47	456.44
Value of production less cash expenses	253.01	387.11	269.68
Capital replacement	30.24	30.22	30.34
Value of production less cash expenses and capital replacement	222.77	356.89	239.34
=====			
Economic (full ownership) costs:			
Variable cash expenses	334.14	333.28	336.06
General farm overhead	25.20	34.32	41.24
Taxes and insurance	10.02	10.51	10.81
Capital replacement	30.24	30.22	30.34
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	8.99	6.22	7.15
Return to other nonland capital <u>4/</u>	6.62	6.79	7.83
Net land return <u>5/</u>	106.77	139.77	113.20
Unpaid labor	17.73	18.47	19.82
Total, economic costs	539.71	579.58	566.44
Residual returns to management and risk <u>6/</u>	160.37	270.00	159.68
=====			
Harvest-period price (dollars/lb.)	.24	.27	.28
Yield (lbs./planted acre)	2,826.16	3,061.28	2,561.00
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 43--U.S. flaxseed production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	73.00	58.86	49.98
Secondary crop	9.24	5.39	5.76
Total	82.24	64.25	55.74
Cash expenses:			
Seed	6.14	6.06	4.81
Fertilizer	3.75	3.07	2.68
Chemicals	4.55	4.50	4.45
Custom operations	1.05	.91	.74
Fuel, lube, and electricity	8.79	5.14	6.36
Repairs	7.12	7.19	7.39
Hired labor	1.94	2.05	1.97
Miscellaneous	.64	.61	.64
Technical services	.09	.10	.10
Total, variable cash expenses	34.07	29.63	29.14
General farm overhead	3.64	3.40	4.27
Taxes and insurance	7.37	7.64	7.88
Interest on operating loans	4.56	3.40	2.31
Interest on real estate	5.83	3.97	4.68
Total, fixed cash expenses	21.40	18.41	19.14
Total, cash expenses	55.47	48.04	48.28
Value of production less cash expenses	26.77	16.21	7.46
Capital replacement	22.32	22.27	22.91
Value of production less cash expenses and capital replacement	4.45	-6.06	-15.45
Economic (full ownership) costs:			
Variable cash expenses	34.07	29.63	29.14
General farm overhead	3.64	3.40	4.27
Taxes and insurance	7.37	7.64	7.88
Capital replacement	22.32	22.27	22.91
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	.74	.47	.49
Return to other nonland capital <u>4/</u>	4.29	4.41	5.21
Net land return <u>5/</u>	17.92	14.62	12.63
Unpaid labor	8.28	8.75	8.42
Total, economic costs	98.63	91.19	90.95
Residual returns to management and risk <u>6/</u>	-16.39	-26.94	-35.21
Harvest-period price (dollars/bu.)	5.46	3.67	3.15
Yield (bu./planted acre)	13.37	16.03	15.84

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 44--U.S. cotton production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	330.89	231.91	438.76
Secondary crop	32.97	31.28	47.20
Total	363.86	263.19	485.96
=====			
Cash expenses:			
Seed	8.75	8.14	8.46
Fertilizer	23.59	19.09	19.93
Lime and gypsum	1.38	1.36	1.29
Chemicals	52.60	50.42	50.99
Custom operations	13.65	15.04	20.32
Fuel, lube, and electricity	34.02	22.91	28.53
Repairs	19.05	17.82	19.03
Hired labor	24.60	23.97	25.73
Purchased irrigation water	6.32	6.08	6.35
Ginning	58.50	42.98	66.36
Miscellaneous	1.32	1.27	1.33
Technical services	1.72	1.63	1.69
Total, variable cash expenses	245.50	210.71	250.00
General farm overhead	21.16	15.48	27.98
Taxes and insurance	10.55	10.17	11.13
Interest on operating loans	19.74	14.25	26.52
Interest on real estate	26.14	19.54	33.69
Total, fixed cash expenses	77.59	59.44	99.32
Total, cash expenses	323.09	270.15	349.32
Value of production less cash expenses (excluding direct Gov't. payments)	40.77	-6.96	136.64
Capital replacement	45.57	41.76	44.52
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-4.80	-48.72	92.12
=====			
Economic (full ownership) costs:			
Variable cash expenses	245.50	210.71	250.00
General farm overhead	21.16	15.48	27.98
Taxes and insurance	10.55	10.17	11.13
Capital replacement	45.57	41.76	44.52
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.38	3.33	3.84
Return to other nonland capital <u>4/</u>	7.66	7.24	8.89
Net land return <u>5/</u>	58.63	43.39	72.67
Unpaid labor	10.05	9.79	10.51
Total, economic costs	404.50	341.87	429.54
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-40.64	-78.68	56.42
=====			
Harvest-period price (dollars/lb.)	.55	.51	.65
Yield (lbs./planted acre)	598.35	457.12	679.32
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 45--Cotton production costs, Delta, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	366.24	248.79	496.29
Secondary crop	26.90	29.10	46.56
Total	393.14	277.89	542.85
=====			
Cash expenses:			
Seed	7.98	7.21	7.94
Fertilizer	32.81	26.40	26.58
Lime and gypsum	1.74	1.88	1.89
Chemicals	82.95	81.17	76.91
Custom operations	8.47	20.78	20.01
Fuel, lube, and electricity	22.50	13.52	17.32
Repairs	22.03	21.97	22.50
Hired labor	18.97	20.00	19.93
Ginning	56.83	45.22	64.51
Miscellaneous	2.51	2.42	2.52
Technical services	2.88	2.83	2.72
Total, variable cash expenses	259.67	243.40	262.83
General farm overhead	21.68	15.04	29.35
Taxes and insurance	9.90	10.47	10.92
Interest on operating loans	22.11	15.25	29.71
Interest on real estate	21.98	15.94	31.21
Total, fixed cash expenses	75.67	56.70	101.19
Total, cash expenses	335.34	300.10	364.02
Value of production less cash expenses (excluding direct Gov't. payments)	57.80	-22.21	178.83
Capital replacement	48.29	48.12	48.85
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	9.51	-70.33	129.98
=====			
Economic (full ownership) costs:			
Variable cash expenses	259.67	243.40	262.83
General farm overhead	21.68	15.04	29.35
Taxes and insurance	9.90	10.47	10.92
Capital replacement	48.29	48.12	48.85
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.12	3.28	3.56
Return to other nonland capital <u>4/</u>	8.43	8.63	10.04
Net land return <u>5/</u>	57.61	45.94	70.03
Unpaid labor	7.75	8.17	8.14
Total, economic costs	418.45	383.05	443.72
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-25.31	-105.16	99.13
=====			
Harvest-period price (dollars/lb.)	.54	.44	.64
Yield (lbs./planted acre)	674.14	561.46	781.18
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 46--Cotton production costs, Southeast, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	398.45	236.08	377.51
Secondary crop	28.95	25.01	35.01
Total	427.40	261.09	412.52
Cash expenses:			
Seed	6.48	6.90	6.65
Fertilizer	38.47	35.72	33.38
Lime and gypsum	8.53	8.32	6.64
Chemicals	110.35	108.92	106.08
Custom operations	10.00	9.75	9.86
Fuel, lube, and electricity	20.63	12.83	16.84
Repairs	20.14	19.71	20.29
Hired labor	16.17	17.24	18.48
Ginning	64.37	38.92	49.98
Miscellaneous	1.85	1.78	1.86
Technical services	2.76	2.75	2.75
Total, variable cash expenses	299.74	262.84	272.81
General farm overhead	15.23	9.31	14.70
Taxes and insurance	11.62	12.08	12.75
Interest on operating loans	16.04	9.52	15.41
Interest on real estate	28.62	17.87	27.73
Total, fixed cash expenses	71.51	48.78	70.59
Total, cash expenses	371.25	311.62	343.40
Value of production less cash expenses (excluding direct Gov't. payments)	56.15	-50.53	69.12
Capital replacement	59.74	58.43	60.00
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-3.59	-108.96	9.12
Economic (full ownership) costs:			
Variable cash expenses	299.74	262.84	272.81
General farm overhead	15.23	9.31	14.70
Taxes and insurance	11.62	12.08	12.75
Capital replacement	59.74	58.43	60.00
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	6.18	4.18	4.45
Return to other nonland capital <u>4/</u>	10.02	10.07	11.88
Net land return <u>5/</u>	49.25	38.90	46.61
Unpaid labor	6.60	7.04	7.55
Total, economic costs	458.39	402.85	430.74
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-30.99	-141.76	-18.22
Harvest-period price (dollars/lb.)	.55	.51	.66
Yield (lbs./planted acre)	728.96	460.67	574.08

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 47--Cotton production costs, Southern Plains, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	199.09	123.61	292.18
Secondary crop	20.80	20.17	32.34
Total	219.89	143.78	324.52
=====			
Cash expenses:			
Seed	9.51	8.35	9.09
Fertilizer	9.49	7.37	7.54
Chemicals	24.16	22.97	22.91
Custom operations	6.62	5.56	6.11
Fuel, lube, and electricity	26.53	17.52	20.34
Repairs	14.99	13.61	14.64
Hired labor	20.24	19.99	21.46
Purchased irrigation water	1.40	1.35	1.41
Ginning	39.90	26.15	50.93
Technical services	.52	.50	.50
Total, variable cash expenses	153.36	123.37	154.93
General farm overhead	11.02	7.24	16.31
Taxes and insurance	7.01	6.85	7.46
Interest on operating loans	12.16	7.98	17.99
Interest on real estate	8.78	5.81	13.07
Total, fixed cash expenses	38.97	27.88	54.83
Total, cash expenses	192.33	151.25	209.75
Value of production less cash expenses (excluding direct Gov't. payments)	27.56	-7.47	114.76
Capital replacement	35.60	31.64	34.22
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-8.04	-39.11	80.54
=====			
Economic (full ownership) costs:			
Variable cash expenses	153.36	123.37	154.93
General farm overhead	11.02	7.24	16.31
Taxes and insurance	7.01	6.85	7.46
Capital replacement	35.60	31.64	34.22
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.48	2.17	2.44
Return to other nonland capital <u>4/</u>	5.77	5.29	6.59
Net land return <u>5/</u>	39.45	25.18	58.47
Unpaid labor	8.27	8.17	8.76
Total, economic costs	263.95	209.91	289.18
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-44.06	-66.13	35.34
=====			
Harvest-period price (dollars/lb.)	.53	.49	.62
Yield (lbs./planted acre)	374.83	252.14	469.70
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 48--Cotton production costs, Southwest, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production (excluding direct Gov't. payments):			
Primary crop	673.69	660.33	865.01
Secondary crop	84.43	87.49	105.64
Total	758.12	747.82	970.65
Cash expenses:			
Seed	8.57	9.96	8.22
Fertilizer	47.98	44.11	42.76
Lime and gypsum	1.91	1.93	1.77
Chemicals	69.61	68.61	69.59
Custom operations	46.66	46.68	74.95
Fuel, lube, and electricity	83.28	72.02	83.64
Repairs	27.11	26.06	26.90
Hired labor	51.92	53.54	54.99
Purchased irrigation water	34.20	32.90	34.35
Ginning	119.26	113.20	131.21
Miscellaneous	4.04	3.88	4.05
Technical services	3.32	3.33	3.33
Total, variable cash expenses	497.86	476.23	535.77
General farm overhead	56.39	55.62	72.37
Taxes and insurance	22.64	22.71	23.20
Interest on operating loans	42.58	41.95	55.59
Interest on real estate	88.42	87.27	112.05
Total, fixed cash expenses	210.03	207.55	263.21
Total, cash expenses	707.89	683.78	798.98
Value of production less cash expenses (excluding direct Gov't. payments)	50.23	64.04	171.67
Capital replacement	67.09	61.88	63.50
Value of production less cash expenses and capital replacement (excluding direct Gov't. payments)	-16.86	2.16	108.17
Economic (full ownership) costs:			
Variable cash expenses	497.86	476.23	535.77
General farm overhead	56.39	55.62	72.37
Taxes and insurance	22.64	22.71	23.20
Capital replacement	67.09	61.88	63.50
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	11.62	7.94	8.83
Return to other nonland capital <u>4/</u>	11.45	11.01	13.06
Net land return <u>5/</u>	127.59	119.17	139.95
Unpaid labor	21.21	21.87	22.46
Total, economic costs	815.84	776.43	879.14
Residual returns to management and risk <u>6/</u> (excluding direct Gov't. payments)	-57.72	-28.61	91.51
Harvest-period price (dollars/lb.)	.59	.59	.69
Yield (lbs./planted acre)	1,146.77	1,117.41	1,261.58

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 49--U.S. sugar-beet production costs, 1985-87 ^{1/}, ^{2/}

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	673.94	730.93	826.72
Secondary crop	1.06	.95	.95
Total	675.01	731.88	827.67
Cash expenses:			
Seed	22.35	22.98	23.52
Fertilizer	47.14	41.55	39.88
Chemicals	44.46	43.80	42.46
Custom operations	37.11	33.84	34.76
Fuel and lubrication	45.60	41.74	41.74
Repairs	34.89	34.82	35.00
Hired labor	47.49	48.79	50.26
Purchased irrigation water	7.38	6.32	6.84
Miscellaneous	.39	.38	.38
Total, variable cash expenses	286.81	274.22	274.85
General farm overhead	41.58	46.07	51.49
Taxes and insurance	17.70	18.29	18.96
Interest	73.04	72.08	78.29
Total, fixed cash expenses	132.32	136.44	148.73
Total, cash expenses	419.14	410.65	423.59
Value of production less cash expenses	255.87	321.22	404.08
Capital replacement	60.07	59.93	60.45
Value of production less cash expenses and capital replacement	195.80	261.29	343.63
Economic (full ownership) costs:			
Variable cash expenses	286.81	274.22	274.85
General farm overhead	41.58	46.07	51.49
Taxes and insurance	17.70	18.29	18.96
Capital replacement	60.07	59.93	60.45
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	8.82	5.97	6.53
Return to other nonland capital ^{4/}	12.21	12.57	14.52
Net land return ^{5/}	100.91	107.74	115.71
Unpaid labor	46.83	50.06	49.58
Total, economic costs	574.93	574.85	592.09
Residual returns to management and risk ^{6/}	100.08	157.03	235.58
Season-average price (dollars/ton)	33.80	35.90	37.50
Yield (net tons/planted acre)	19.91	20.39	22.03

^{1/} To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." ^{2/} Sum of operator and landlord expenses. ^{3/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{5/} Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. ^{6/} Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 50--Sugar-beet production costs, Michigan and Ohio, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	553.90	510.90	597.14
Total	553.90	510.90	597.14
Cash expenses:			
Seed	13.40	14.07	14.07
Fertilizer	71.39	64.71	63.25
Chemicals	35.84	35.56	34.72
Custom operations	11.44	11.44	11.59
Fuel and lubrication	25.36	23.43	23.77
Repairs	28.46	28.46	28.65
Hired labor	14.17	14.82	15.70
Miscellaneous	2.27	2.14	2.17
Total, variable cash expenses	202.33	194.63	193.92
General farm overhead	16.47	15.19	17.87
Taxes and insurance	32.03	31.41	32.12
Interest	61.94	51.13	58.08
Total, fixed cash expenses	110.44	97.73	108.07
Total, cash expenses	312.77	292.36	301.99
Value of production less cash expenses	241.13	218.54	295.15
Capital replacement	46.43	46.43	46.73
Value of production less cash expenses and capital replacement	194.70	172.11	248.42
Economic (full ownership) costs:			
Variable cash expenses	202.33	194.63	193.92
General farm overhead	16.47	15.19	17.87
Taxes and insurance	32.03	31.41	32.12
Capital replacement	46.43	46.43	46.73
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.75	3.91	4.22
Return to other nonland capital <u>4/</u>	9.93	10.21	11.80
Net land return <u>5/</u>	75.29	65.29	63.15
Unpaid labor	30.12	31.49	33.36
Total, economic costs	418.35	398.56	403.17
Residual returns to management and risk <u>6/</u>	135.55	112.34	193.97
Season-average price (dollars/ton)	29.40	30.00	30.25
Yield (net tons/planted acre)	18.84	17.03	19.74

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 51--Sugar-beet production costs, Minnesota and eastern North Dakota, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	634.73	659.74	838.88
Total	634.73	659.74	838.88
=====			
Cash expenses:			
Seed	23.67	23.67	23.67
Fertilizer	29.37	27.00	25.29
Chemicals	52.05	51.64	50.43
Custom operations	10.96	10.96	10.67
Fuel and lubrication	25.63	23.06	23.08
Repairs	32.36	32.35	32.57
Hired labor	28.45	29.80	30.36
Miscellaneous	.23	.22	.22
Total, variable cash expenses	202.72	198.70	196.29
General farm overhead	33.92	35.26	45.13
Taxes and insurance	16.09	16.81	17.43
Interest	68.92	64.11	79.22
Total, fixed cash expenses	118.93	116.18	141.78
Total, cash expenses	321.65	314.88	338.07
Value of production less cash expenses	313.08	344.86	500.81
Capital replacement	59.03	59.03	59.43
Value of production less cash expenses and capital replacement	254.05	285.83	441.38
=====			
Economic (full ownership) costs:			
Variable cash expenses	202.72	198.70	196.29
General farm overhead	33.92	35.26	45.13
Taxes and insurance	16.09	16.81	17.43
Capital replacement	59.03	59.03	59.43
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	5.52	3.86	4.13
Return to other nonland capital <u>4/</u>	12.46	12.80	14.80
Net land return <u>5/</u>	73.18	79.12	85.77
Unpaid labor	30.82	32.28	32.88
Total, economic costs	433.74	437.86	455.86
Residual returns to management and risk <u>6/</u>	200.99	221.88	383.02
=====			
Season-average price (dollars/ton)	35.80	39.20	42.80
Yield (net tons/planted acre)	17.73	16.83	19.60
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 52--Sugar-beet production costs, Colorado, Nebraska, and
southeastern Wyoming, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	595.53	757.66	684.28
Secondary crop	2.30	2.14	2.04
Total	597.83	759.80	686.32
=====			
Cash expenses:			
Seed	29.11	29.11	30.97
Fertilizer	35.75	29.91	28.90
Chemicals	26.86	26.66	26.02
Custom operations	16.98	16.98	16.53
Fuel and lubrication	58.96	53.64	53.83
Repairs	39.78	39.60	39.88
Hired labor	54.45	61.28	54.76
Purchased irrigation water	6.29	5.92	6.00
Miscellaneous	.12	.11	.11
Total, variable cash expenses	268.30	263.21	257.00
General farm overhead	49.49	62.89	57.19
Taxes and insurance	15.91	16.42	17.02
Interest	86.27	98.13	86.14
Total, fixed cash expenses	151.67	177.44	160.35
Total, cash expenses	419.97	440.65	417.35
Value of production less cash expenses	177.86	319.15	268.97
Capital replacement	68.94	67.30	69.28
Value of production less cash expenses and capital replacement	108.92	251.85	199.69
=====			
Economic (full ownership) costs:			
Variable cash expenses	268.30	263.21	257.00
General farm overhead	49.49	62.89	57.19
Taxes and insurance	15.91	16.42	17.02
Capital replacement	68.94	67.30	69.28
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	8.33	5.91	6.13
Return to other nonland capital <u>4/</u>	13.67	14.02	16.22
Net land return <u>5/</u>	125.84	155.73	139.88
Unpaid labor	72.19	81.23	72.60
Total, economic costs	622.67	666.71	625.32
Residual returns to management and risk <u>6/</u>	-24.84	93.09	51.00
=====			
Season-average price (dollars/ton)	28.70	32.70	35.40
Yield (net tons/planted acre)	20.75	23.17	19.33

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 53--Sugar-beet production costs, Texas and New Mexico,
1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	647.58	535.68	599.04
Secondary crop	1.81	1.69	1.61
Total	649.39	537.37	600.65
Cash expenses:			
Seed	23.68	23.68	25.57
Fertilizer	27.96	24.99	23.22
Chemicals	108.16	107.31	104.78
Custom operations	77.10	77.10	75.04
Fuel and lubrication	116.77	100.11	96.06
Repairs	49.19	49.19	49.52
Hired labor	49.64	51.61	53.38
Total, variable cash expenses	452.50	433.99	427.57
General farm overhead	28.81	23.83	26.82
Taxes and insurance	10.74	11.37	11.76
Interest	61.78	45.75	49.69
Total, fixed cash expenses	101.33	80.95	88.27
Total, cash expenses	553.83	514.94	515.84
Value of production less cash expenses	95.56	22.43	84.81
Capital replacement	62.21	62.21	62.62
Value of production less cash expenses and capital replacement	33.35	-39.78	22.19
Economic (full ownership) costs:			
Variable cash expenses	452.50	433.99	427.57
General farm overhead	28.81	23.83	26.82
Taxes and insurance	10.74	11.37	11.76
Capital replacement	62.21	62.21	62.62
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	13.88	9.49	10.20
Return to other nonland capital <u>4/</u>	11.17	11.48	13.27
Net land return <u>5/</u>	72.23	49.57	61.71
Unpaid labor	47.69	49.59	51.29
Total, economic costs	699.23	651.53	665.24
Residual returns to management and risk <u>6/</u>	-49.84	-114.16	-64.59
Season-average price (dollars/ton)	29.40	24.00	32.00
Yield (net tons/planted acre)	22.03	22.32	18.72

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 54--Sugar-beet production costs, Montana, northwestern Wyoming, and northwestern North Dakota, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	687.72	781.26	896.53
Secondary crop	1.83	1.70	1.63
Total	689.55	782.96	898.16
Cash expenses:			
Seed	28.46	28.46	30.47
Fertilizer	59.06	45.64	44.86
Chemicals	28.86	28.63	27.96
Custom operations	23.78	23.78	23.15
Fuel and lubrication	33.97	32.14	32.22
Repairs	34.70	34.70	34.93
Hired labor	52.52	57.96	54.51
Purchased irrigation water	11.87	10.75	10.90
Miscellaneous	.19	.18	.18
Total, variable cash expenses	273.41	262.24	259.18
General farm overhead	42.50	48.26	55.73
Taxes and insurance	12.31	13.12	13.66
Interest	75.32	76.54	85.33
Total, fixed cash expenses	130.13	137.92	154.72
Total, cash expenses	403.54	400.16	413.90
Value of production less cash expenses	286.01	382.80	484.26
Capital replacement	58.57	58.57	58.96
Value of production less cash expenses and capital replacement	227.44	324.23	425.30
Economic (full ownership) costs:			
Variable cash expenses	273.41	262.24	259.18
General farm overhead	42.50	48.26	55.73
Taxes and insurance	12.31	13.12	13.66
Capital replacement	58.57	58.57	58.96
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	8.30	5.75	6.09
Return to other nonland capital <u>4/</u>	11.74	12.07	13.95
Net land return <u>5/</u>	128.16	140.77	163.83
Unpaid labor	75.57	83.41	78.44
Total, economic costs	610.56	624.19	649.84
Residual returns to management and risk <u>6/</u>	78.99	158.77	248.32
Season-average price (dollars/ton)	35.80	38.60	40.90
Yield (net tons/planted acre)	19.21	20.24	21.92

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 55--Sugar-beet production costs, eastern Idaho, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	733.83	836.47	938.96
Secondary crop	.30	.28	.27
Total	734.13	836.75	939.23
Cash expenses:			
Seed	21.55	21.87	21.87
Fertilizer	62.97	55.58	53.81
Chemicals	13.49	13.38	13.07
Custom operations	18.44	18.44	17.47
Fuel and lubrication	82.84	85.88	84.95
Repairs	46.04	46.04	46.35
Hired labor	15.74	17.57	16.50
Purchased irrigation water	9.96	9.38	9.51
Total, variable cash expenses	271.03	268.14	263.53
General farm overhead	83.03	94.64	106.93
Taxes and insurance	15.97	17.01	17.62
Interest	78.96	80.55	87.86
Total, fixed cash expenses	177.96	192.20	212.41
Total, cash expenses	448.99	460.34	475.94
Value of production less cash expenses	285.14	376.41	463.29
Capital replacement	75.76	75.76	76.27
Value of production less cash expenses and capital replacement	209.38	300.65	387.02
Economic (full ownership) costs:			
Variable cash expenses	271.03	268.14	263.53
General farm overhead	83.03	94.64	106.93
Taxes and insurance	15.97	17.01	17.62
Capital replacement	75.76	75.76	76.27
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	8.93	6.39	6.71
Return to other nonland capital <u>4/</u>	14.67	15.08	17.44
Net land return <u>5/</u>	76.04	86.83	108.65
Unpaid labor	89.20	99.54	93.51
Total, economic costs	634.63	663.39	690.66
Residual returns to management and risk <u>6/</u>	99.50	173.36	248.57
Season-average price (dollars/ton)	36.60	36.40	38.80
Yield (net tons/planted acre)	20.05	22.98	24.20

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 56--Sugar-beet production costs, western Idaho and Oregon,
1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	930.96	1,046.18	1,030.68
Secondary crop	1.52	1.42	1.35
Total	932.48	1,047.60	1,032.03
Cash expenses:			
Seed	27.17	27.58	27.58
Fertilizer	93.29	82.17	79.58
Chemicals	61.07	60.59	59.16
Custom operations	35.31	35.29	34.37
Fuel and lubrication	41.29	42.26	42.02
Repairs	36.26	36.25	36.50
Hired labor	88.22	95.96	93.95
Purchased irrigation water	9.67	9.11	9.23
Miscellaneous	.06	.06	.06
Total, variable cash expenses	392.34	389.27	382.45
General farm overhead	82.90	93.13	92.36
Taxes and insurance	14.31	15.25	15.81
Interest	145.20	146.00	139.78
Total, fixed cash expenses	242.41	254.38	247.95
Total, cash expenses	634.75	643.65	630.40
Value of production less cash expenses	297.73	403.95	401.63
Capital replacement	59.90	59.89	60.30
Value of production less cash expenses and capital replacement	237.83	344.06	341.33
Economic (full ownership) costs:			
Variable cash expenses	392.34	389.27	382.45
General farm overhead	82.90	93.13	92.36
Taxes and insurance	14.31	15.25	15.81
Capital replacement	59.90	59.89	60.30
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	11.27	7.90	8.39
Return to other nonland capital <u>4/</u>	11.76	12.09	13.98
Net land return <u>5/</u>	208.24	234.43	233.31
Unpaid labor	36.04	39.20	38.38
Total, economic costs	816.76	851.16	844.98
Residual returns to management and risk <u>6/</u>	115.72	196.44	187.05
Season-average price (dollars/ton)	36.00	36.10	36.00
Yield (net tons/planted acre)	25.86	28.98	28.63

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 57--Sugar-beet production costs, California, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per planted acre</u>			
Gross value of production:			
Primary crop	741.11	889.29	918.66
Secondary crop	3.12	2.90	2.77
Total	744.23	892.19	921.43
Cash expenses:			
Seed	18.84	20.54	21.94
Fertilizer	45.40	42.47	38.54
Chemicals	44.62	44.27	43.23
Custom operations	120.93	120.94	117.71
Fuel and lubrication	70.85	67.14	65.24
Repairs	34.42	34.42	34.65
Hired labor	101.84	104.97	109.84
Purchased irrigation water	24.76	23.31	23.64
Total, variable cash expenses	461.66	458.06	454.79
General farm overhead	39.40	47.24	49.11
Taxes and insurance	17.71	18.35	18.89
Interest	56.56	60.69	60.91
Total, fixed cash expenses	113.67	126.28	128.91
Total, cash expenses	575.33	584.34	583.70
Value of production less cash expenses	168.90	307.85	337.73
Capital replacement	61.29	61.29	61.69
Value of production less cash expenses and capital replacement	107.61	246.56	276.04
Economic (full ownership) costs:			
Variable cash expenses	461.66	458.06	454.79
General farm overhead	39.40	47.24	49.11
Taxes and insurance	17.71	18.35	18.89
Capital replacement	61.29	61.29	61.69
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	15.98	11.19	12.29
Return to other nonland capital <u>4/</u>	12.15	12.49	14.44
Net land return <u>5/</u>	129.89	134.74	148.80
Unpaid labor	52.47	54.08	56.59
Total, economic costs	790.55	797.44	816.60
Residual returns to management and risk <u>6/</u>	-46.32	94.75	104.83
Season-average price (dollars/ton)	33.10	35.70	33.70
Yield (net tons/planted acre)	22.39	24.91	27.26

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 5/ Of total acres rented, percentage of cash- and share-rented acres multiplied by the average cash and share rent. 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 58--U.S. sugarcane production costs, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per harvested acre</u>			
Gross value of production:			
Primary crop <u>3/</u>	990.57	1,053.78	1,017.77
Hauling allowance	8.11	9.76	8.37
Total	998.68	1,063.54	1,026.14
=====			
Cash expenses:			
Seed	2.49	2.33	2.45
Fertilizer	63.15	58.03	53.63
Chemicals	54.35	53.88	52.87
Custom operations	31.78	30.14	28.17
Fuel and lubrication	40.33	38.94	33.84
Repairs	113.35	107.33	102.44
Hired labor	344.70	340.13	331.75
Purchased irrigation water	1.99	1.90	2.03
Miscellaneous	20.49	20.21	19.46
Total, variable cash expenses	672.63	652.89	626.64
General farm overhead	74.43	75.64	74.19
Taxes and insurance	28.88	29.62	30.11
Interest	N/A	N/A	N/A
Total, fixed cash expenses	103.31	105.26	104.30
Total, cash expenses	775.94	758.15	730.94
Value of production less cash expenses	222.74	305.39	295.20
Capital replacement	76.59	76.68	77.91
Value of production less cash expenses and capital replacement	146.15	228.71	217.29
=====			
Economic (full ownership) costs:			
Variable cash expenses	672.63	652.89	626.64
General farm overhead	74.43	75.64	74.19
Taxes and insurance	28.88	29.62	30.11
Capital replacement	76.59	76.68	77.91
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	25.14	19.00	18.44
Return to other nonland capital <u>5/</u>	38.67	28.23	30.53
Land	158.25	162.77	165.46
Unpaid labor	20.50	21.85	22.25
Total, economic costs	1,095.09	1,066.68	1,045.53
Residual returns to management and risk <u>6/</u>	-96.41	-3.14	-19.39
=====			
Season-average price (dollars/ton)	26.70	27.30	28.40
Yield (net tons/acre)	37.10	38.60	35.90

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Includes returns from molasses. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 59--Sugarcane production costs, Florida, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per harvested acre</u>			
Gross value of production:			
Primary crop <u>3/</u>	927.78	959.90	962.54
Total	927.78	959.90	962.54
Cash expenses:			
Seed	3.62	3.57	3.71
Fertilizer	36.01	35.09	34.38
Chemicals	42.38	42.31	42.45
Custom operations	36.15	34.35	32.45
Fuel and lubrication	36.30	28.18	22.52
Repairs	85.64	85.50	84.02
Hired labor	389.85	396.51	391.42
Miscellaneous	17.90	17.77	17.93
Total, variable cash expenses	647.85	643.28	628.88
General farm overhead	63.18	62.90	62.09
Taxes and insurance	34.85	35.99	36.53
Interest	N/A	N/A	N/A
Total, fixed cash expenses	98.03	98.89	98.62
Total, cash expenses	745.88	742.17	727.50
Value of production less cash expenses	181.90	217.73	235.04
Capital replacement	47.16	48.77	49.49
Value of production less cash expenses and capital replacement	134.74	168.96	185.55
Economic (full ownership) costs:			
Variable cash expenses	647.85	643.28	628.88
General farm overhead	63.18	62.90	62.09
Taxes and insurance	34.85	35.99	36.53
Capital replacement	47.16	48.77	49.49
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	24.77	19.41	19.04
Return to other nonland capital <u>5/</u>	29.12	20.22	21.49
Land	184.47	184.46	179.51
Total, economic costs	1,031.40	1,015.03	997.03
Residual returns to management and risk <u>6/</u>	-103.62	-55.13	-34.49
Season-average price (dollars/ton)	28.20	29.00	29.80
Yield (net tons/acre)	32.90	33.10	32.30

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Includes returns from molasses. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 60--Sugarcane production costs, Hawaii, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per harvested acre</u>			
Gross value of production:			
Primary crop <u>3/</u>	2,677.93	2,795.50	2,420.60
Total	2,677.93	2,795.50	2,420.60
Cash expenses:			
Fertilizer	251.14	243.70	236.72
Chemicals	97.29	98.03	96.70
Custom operations	50.72	50.39	45.29
Fuel and lubrication	73.39	66.85	45.78
Repairs	371.60	336.99	319.22
Hired labor	1,087.24	1,087.31	1,128.53
Miscellaneous	95.58	98.78	99.14
Total, variable cash expenses	2,026.96	1,982.05	1,971.38
General farm overhead	220.42	219.76	231.58
Taxes and insurance	34.38	36.17	39.41
Interest	N/A	N/A	N/A
Total, fixed cash expenses	254.80	255.93	270.99
Total, cash expenses	2,281.76	2,237.98	2,242.37
Value of production less cash expenses	396.17	557.52	178.23
Capital replacement	178.49	186.33	203.43
Value of production less cash expenses and capital replacement	217.68	371.19	-25.20
Economic (full ownership) costs:			
Variable cash expenses	2,026.96	1,982.05	1,971.38
General farm overhead	220.42	219.76	231.58
Taxes and insurance	34.38	36.17	39.41
Capital replacement	178.49	186.33	203.43
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	77.54	59.86	59.73
Return to other nonland capital <u>5/</u>	151.66	106.51	121.67
Land	233.10	227.24	253.12
Total, economic costs	2,922.55	2,817.92	2,880.32
Residual returns to management and risk <u>6/</u>	-244.62	-22.42	-459.72
Season-average price (dollars/ton)	28.10	27.90	24.50
Yield (net tons/acre)	95.30	100.20	98.80

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Includes returns from molasses. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 61--Sugarcane production costs, Louisiana, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per harvested acre</u>			
Gross value of production:			
Primary crop <u>3/</u>	532.80	630.63	703.03
Hauling allowance	25.95	29.51	24.72
Total	558.75	660.14	727.75
Cash expenses:			
Seed	1.74	1.57	1.54
Fertilizer	40.86	32.35	28.84
Chemicals	57.55	55.77	54.20
Custom operations	16.83	16.07	15.67
Fuel and lubrication	60.45	48.40	49.04
Repairs	70.68	68.74	68.87
Hired labor	18.11	18.04	17.84
Total, variable cash expenses	266.21	240.94	236.00
General farm overhead	41.40	46.74	46.83
Taxes and insurance	19.21	19.64	20.26
Interest	N/A	N/A	N/A
Total, fixed cash expenses	60.61	66.38	67.09
Total, cash expenses	326.82	307.32	303.09
Value of production less cash expenses	231.93	352.82	424.66
Capital replacement	91.71	88.84	89.03
Value of production less cash expenses and capital replacement	140.22	263.98	335.63
Economic (full ownership) costs:			
Variable cash expenses	266.21	240.94	236.00
General farm overhead	41.40	46.74	46.83
Taxes and insurance	19.21	19.64	20.26
Capital replacement	91.71	88.84	89.03
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	7.72	5.00	5.26
Return to other nonland capital <u>5/</u>	17.53	17.44	20.07
Land	94.88	111.51	123.73
Unpaid labor	63.21	64.45	63.72
Total, economic costs	601.87	594.56	604.90
Residual returns to management and risk <u>6/</u>	-43.12	65.58	122.85
Season-average price (dollars/ton)	22.20	23.10	30.70
Yield (net tons/acre)	24.00	27.30	22.90

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Includes returns from molasses. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 62--Sugarcane production costs, Texas, 1985-87 1/, 2/

Item	1985	1986	1987
<u>Dollars per harvested acre</u>			
Gross value of production:			
Primary crop <u>3/</u>	579.60	855.25	791.04
Total	579.60	855.25	791.04
=====			
Cash expenses:			
Fertilizer	56.95	50.95	42.50
Chemicals	63.95	65.26	62.11
Custom operations	34.92	35.11	34.37
Fuel and lubrication	26.10	23.31	22.30
Repairs	68.11	69.05	69.25
Hired labor	177.46	182.63	181.20
Purchased irrigation water	47.02	48.38	47.16
Miscellaneous	.61	.60	.61
Total, variable cash expenses	475.12	475.29	459.50
General farm overhead	62.91	78.94	57.59
Taxes and insurance	8.35	8.98	9.14
Interest	N/A	N/A	N/A
Total, fixed cash expenses	71.26	87.92	66.73
Total, cash expenses	546.38	563.21	526.23
Value of production less cash expenses	33.22	292.04	264.81
Capital replacement	31.46	32.64	32.73
Value of production less cash expenses and capital replacement	1.76	259.40	232.08
=====			
Economic (full ownership) costs:			
Variable cash expenses	475.12	475.29	459.50
General farm overhead	62.91	78.94	57.59
Taxes and insurance	8.35	8.98	9.14
Capital replacement	31.46	32.64	32.73
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	20.53	15.44	15.68
Return to other nonland capital <u>5/</u>	3.85	4.08	4.60
Land	94.99	122.37	115.69
Unpaid labor	15.69	16.31	16.03
Total, economic costs	712.90	754.05	710.96
Residual returns to management and risk <u>6/</u>	-133.30	101.20	80.08
=====			
Season-average price (dollars/ton)	20.70	27.50	25.60
Yield (net tons/acre)	28.00	31.10	30.90
=====			

1/ To estimate the per-unit expense or cost of production from these items, refer to text section "USING COST-OF-PRODUCTION DATA." 2/ Sum of operator and landlord expenses. 3/ Includes returns from molasses. 4/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 6/ Calculated by subtracting total economic (full ownership) costs from gross value of production.

Table 63--U.S. fed cattle production costs, all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Fed beef (100 lbs) 2/	59.49	58.14	65.36
Total	59.49	58.14	65.36
=====			
Cash expenses:			
Feeders--			
Feeder cattle (59.80 lbs)	38.90	34.73	36.81
Feed--			
Haylage (22.7 lbs)	.05	.10	.14
Silage (175.6 lbs)	.92	1.63	1.54
Dry grain (217.5 lbs)	10.88	8.10	6.46
Concentrates (40.1 lbs)	.66	1.36	1.92
Protein supplements (22.4 lbs)	2.07	2.43	2.62
Legume hay (35.0 lbs)	1.02	.36	.44
Other roughages (19.4 lbs)	.55	.93	1.02
Pasture	0	.01	.01
Other--			
Veterinary and medicine	.52	.57	.53
Livestock hauling	.15	.36	.36
Marketing	.06	.17	.19
Bedding	.05	.14	.14
Fuel, lube, and electricity	.48	.52	.66
Machinery and building repairs	.55	1.02	1.02
Hired labor	.76	.68	.67
Miscellaneous	1.00	.67	.72
Manure credit	-.08	-.07	-.08
Total, variable cash expenses	58.54	53.71	55.17
General farm overhead	.39	.43	.45
Taxes and insurance	.16	.30	.29
Hired management	.11	.07	.06
Interest	4.28	4.18	4.70
Total, fixed cash expenses	4.94	4.98	5.50
Total, cash expenses	63.48	58.69	60.67
Value of production less cash expenses	-3.99	-.55	4.69
Capital replacement	1.11	2.62	2.76
Value of production less cash expenses and capital replacement	-5.10	-3.17	1.93
=====			
Economic (full ownership) costs:			
Variable cash expenses	58.54	53.71	55.17
General farm overhead	.39	.43	.45
Taxes and insurance	.16	.30	.29
Capital replacement	1.11	2.62	2.76
Hired management	.11	.07	.06
Allocated returns to owned inputs:			
Return to operating capital 3/	1.24	1.01	1.15
Return to other nonland capital 4/	.43	.35	.33
Land 5/	.13	.10	.10
Unpaid labor	1.39	1.43	1.43
Total, economic costs	63.50	60.02	61.74
Residual returns to management and risk	-4.01	-1.88	3.62

1/Of liveweight sold. 2/Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 64--Fed cattle production costs, farmer feedlots,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Fed beef (100 lbs) 2/	58.28	57.79	65.13
Total	58.28	57.79	65.13
=====			
Cash expenses:			
Feeders--			
Feeder cattle (55.0 lbs)	35.48	31.98	33.95
Feed--			
Haylage (44.0 lbs)	.25	.20	.27
Silage (326.0 lbs)	3.24	2.92	2.82
Dry grain (196.3 lbs)	7.66	6.80	5.89
Concentrates (70.28 lbs)	3.31	2.21	3.23
Protein supplement (24.7 lbs)	2.49	2.78	3.05
Legume hay (68 lbs)	.57	.69	.86
Pasture	.01	.01	.01
Other--			
Veterinary and medicine	.56	.62	.59
Livestock hauling	.75	.70	.69
Marketing	.32	.33	.36
Bedding	.23	.27	.27
Fuel, lube, and electricity	.88	.68	.85
Machinery and building repairs	1.55	1.70	1.71
Hired labor	.54	.52	.51
Manure credit	-.10	-.07	-.08
Total, variable cash expenses	57.74	52.34	54.98
General farm overhead	1.97	.83	.88
Taxes and insurance	.50	.51	.50
Interest	5.71	4.15	4.68
Total, fixed cash expenses	8.18	5.49	6.06
Total, cash expenses	65.92	57.83	61.04
Value of production less cash expenses	-7.64	-.04	4.09
Capital replacement	3.72	4.49	4.76
Value of production less cash expenses and capital replacement	-11.36	-4.53	-.67
=====			
Economic (full ownership) costs:			
Variable cash expenses	57.74	52.34	54.98
General farm overhead	1.97	.83	.88
Taxes and insurance	.50	.51	.50
Capital replacement	3.72	4.49	4.76
Allocated returns to owned inputs:			
Return of operating capital 3/	1.49	1.11	1.35
Return to other nonland capital 4/	.70	.60	.55
Land 5/	.21	.18	.17
Unpaid labor	2.51	2.78	2.78
Total, economic costs	68.84	62.84	65.97
Residual returns to management and risk	-10.56	-5.05	-.67

1/Of liveweight sold. 2/Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 65--Fed cattle production costs, commercial feedlots,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Fed beef (100 lbs) 2/	59.79	58.52	65.61
Total	59.79	58.52	65.61
=====			
Cash expenses:			
Feeders--			
Feeder cattle (64.9 lbs)	39.75	37.66	39.85
Feed--			
Silage (16.0 lbs)	.34	.26	.19
Dry grain (240.0 lbs)	11.18	9.47	7.06
Concentrates (8.0 lbs)	.50	.45	.53
Protein supplements (20.0 lbs)	1.96	2.06	2.17
Other roughages (40.0 lbs)	1.81	1.92	2.10
Other--			
Veterinary and medicine	.51	.52	.47
Fuel, lube, and electricity	.38	.36	.46
Machinery and building repairs	.30	.29	.29
Hired labor	.81	.85	.85
Miscellaneous	1.25	1.39	1.49
Manure credit	-.07	-.07	-.07
Total, variable cash expenses	58.72	55.16	55.39
Taxes and insurance	.07	.08	.07
Hired management	.14	.15	.13
Interest	3.92	4.21	4.72
Total, fixed cash expenses	4.13	4.44	4.92
Total, cash expenses	62.85	59.60	60.31
Value of production less cash expenses	-3.06	-1.08	5.30
Capital replacement	.46	.63	.64
Value of production less cash expenses and capital replacement	-3.52	-1.71	4.66
=====			
Economic (full ownership) costs:			
Variable cash expenses	58.72	55.16	55.39
Taxes and insurance	.07	.08	.07
Hired management	.14	.15	.13
Capital replacement	.46	.63	.64
Allocated returns to owned inputs:			
Return to operating capital 3/	.92	.90	.94
Return to other nonland capital 4/	.10	.09	.10
Land 5/	.02	.02	.02
Unpaid labor	0	0	0
Total, economic costs	60.43	57.09	57.29
Residual returns to management and risk	-.64	1.43	8.32

1/Of liveweight sold. 2/Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector

Table 66--U.S. cow-calf production costs, all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.116 cwt) ^{1/}	77.71	78.17	86.79
Heifer calves (.7813 cwt)	46.22	47.81	60.01
Feeder steers (.9982 cwt)	61.52	66.70	84.11
Feeder heifers (.7150 cwt)	40.30	43.96	47.72
Cull cows (.7974 cwt)	28.64	28.83	34.31
Total	254.39	265.47	312.94
=====			
Cash expenses:			
Feed--			
Grain (2.277 cwt)	9.39	7.31	5.94
Silage (.286 ton)	6.04	5.79	6.07
Protein supplements (1.462 cwt)	16.00	16.73	17.65
Salt and minerals (.332 cwt)	2.69	2.67	2.69
Hay (1.112 ton)	42.96	34.15	35.17
Pasture	36.44	36.23	39.78
Public grazing	.66	.74	.71
Crop residue (purchased)	.07	.08	.06
Other--			
Veterinary and medicine	6.38	6.56	6.69
Livestock hauling	1.85	1.88	1.98
Marketing	4.21	4.17	4.42
Custom feed mixing	.49	.28	.28
Fuel, lube, and electricity	16.00	12.17	14.06
Machinery and building repairs	22.51	21.92	21.96
Hired labor (3.274 hr)	13.98	14.07	15.01
Total, variable cash expenses	179.67	164.75	172.47
General farm overhead	17.48	25.64	30.00
Taxes and insurance	19.04	10.47	9.77
Interest	44.30	37.20	43.60
Total, fixed cash expenses	80.82	73.31	83.37
Total, cash expenses	260.49	238.06	255.84
Value of production less cash expenses	-6.10	27.41	57.10
Capital replacement	64.53	74.20	75.58
Value of production less cash expenses and capital replacement	-70.63	-46.79	-18.48
=====			
Economic (full ownership) costs:			
Variable cash expenses	179.67	164.75	172.47
General farm overhead	17.48	25.64	30.00
Taxes and insurance	19.04	10.47	9.77
Capital replacement	64.53	74.20	75.58
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	8.86	5.85	6.50
Return to other nonland capital ^{3/}	22.36	21.56	26.17
Land ^{4/}	60.83	37.80	37.82
Unpaid labor	78.27	80.06	81.24
Total, economic costs	451.04	420.33	439.55
Residual returns to management and risk	-196.65	-154.86	-126.61

^{1/} Quantities per cow in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 67--U.S. cow-calf production costs, operations with
100 or fewer cows, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.2469 cwt) <u>1/</u>	85.05	86.80	101.31
Heifer calves (.8523 cwt)	48.68	50.96	64.51
Feeder steers (.8501 cwt)	52.53	55.59	69.14
Feeder heifers (.6868 cwt)	39.59	41.24	48.49
Cull cows (.7797 cwt)	27.43	26.98	32.50
Total	253.28	261.57	315.95
Cash expenses:			
Feed--			
Grain (2.029 cwt)	11.69	7.55	5.63
Silage (.268 ton)	5.33	5.11	5.35
Protein supplements (1.343 cwt)	16.75	14.20	15.11
Salt and minerals (.323 cwt)	2.88	2.95	2.98
Hay (1.404 ton)	52.64	40.90	42.97
Pasture	33.62	29.24	28.28
Public grazing	.36	.38	.37
Other--			
Veterinary and medicine	6.31	6.59	6.72
Livestock hauling	1.48	1.54	1.57
Marketing	4.65	4.70	4.88
Custom feed mixing	.59	.41	.42
Fuel, lube, and electricity	20.36	14.83	17.35
Machinery and building repairs	26.32	26.53	26.86
Hired labor (1.401 hr)	6.69	5.85	6.16
Total, variable cash expenses	189.67	160.78	164.65
General farm overhead	33.51	35.36	42.73
Taxes and insurance	22.25	11.97	11.29
Interest	49.66	45.97	55.44
Total, fixed cash expenses	105.42	93.30	109.46
Total, cash expenses	295.09	254.08	274.11
Value of production less cash expenses	-41.81	7.49	41.84
Capital replacement	77.05	91.29	94.00
Value of production less cash expenses and capital replacement	-118.86	-83.80	-52.16
Economic (full ownership) costs:			
Variable cash expenses	189.67	160.78	164.65
General farm overhead	33.51	35.36	42.73
Taxes and insurance	22.25	11.97	11.29
Capital replacement	77.05	91.29	94.00
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	10.55	6.48	7.37
Return to other nonland capital <u>3/</u>	26.57	31.43	38.97
Land <u>4/</u>	63.88	42.32	43.11
Unpaid labor	103.17	108.89	112.92
Total, economic costs	526.65	488.52	515.04
Residual returns to management and risk	-273.37	-226.95	-199.09

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 68--U.S. cow-calf productions costs, operations with
100-499 cows, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.0920 cwt) ^{1/}	75.39	74.29	78.57
Heifer calves (.8008 cwt)	46.96	48.01	58.99
Feeder steers (1.1479 cwt)	68.09	74.81	91.96
Feeder heifers (.7604 cwt)	41.17	45.76	46.88
Cull cows (.8678 cwt)	30.00	31.26	37.93
Total	261.61	274.13	314.33
=====			
Cash expenses:			
Feed--			
Grain (3.248 cwt)	11.16	8.91	6.65
Silage (.425 ton)	8.73	8.37	8.77
Protein supplements (1.837 cwt)	18.74	20.96	22.20
Salt and minerals (.337 cwt)	2.41	2.40	2.44
Hay (1.242 ton)	37.57	29.79	30.78
Pasture	39.64	40.78	39.13
Public grazing	1.01	1.06	1.05
Crop residue	.23	.25	.22
Other--			
Veterinary and medicine	6.76	6.94	7.06
Livestock hauling	1.94	1.87	1.91
Marketing	3.84	3.88	4.00
Custom feed mixing	.50	.17	.17
Fuel, lube, and electricity	13.42	10.35	11.90
Machinery and building repairs	18.12	17.85	17.93
Hired labor (4.420 hr)	18.30	19.22	20.06
Total, variable cash expenses	182.37	172.80	174.27
General farm overhead	15.42	17.55	19.98
Taxes and insurance	16.43	8.52	8.17
Interest	48.15	30.61	35.10
Total, fixed cash expenses	80.00	56.68	63.25
Total, cash expenses	262.37	229.48	237.52
Value of production less cash expenses	-.76	44.65	76.81
Capital replacement	52.83	59.92	61.66
Value of production less cash expenses and capital replacement	-53.59	-15.27	15.15
=====			
Economic (full ownership) costs:			
Variable cash expenses	182.37	172.80	174.27
General farm overhead	15.42	17.55	19.98
Taxes and insurance	16.43	8.52	8.17
Capital replacement	52.83	59.92	61.66
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	8.28	5.66	6.23
Return to other nonland capital ^{3/}	19.79	12.38	15.28
Land ^{4/}	55.30	31.69	32.49
Unpaid labor	58.71	59.83	61.52
Total, economic costs	409.13	368.35	379.60
Residual returns to management and risk	-147.52	-94.22	-65.27

^{1/} Quantities per cow in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 69--U.S. cow-calf production costs, operations with
500 or more cows, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (.7978 cwt) ^{1/}	53.82	54.45	55.36
Heifer calves (.5976 cwt)	34.69	35.70	47.76
Feeder steers (1.4462 cwt)	82.10	90.57	116.83
Feeder heifers (.8608 cwt)	45.13	50.25	46.40
Cull cows (.8748 cwt)	30.30	30.76	33.55
Total	246.04	261.73	299.90
=====			
Cash expenses:			
Feed--			
Grain (1.927 cwt)	3.47	3.24	5.88
Silage (.254 ton)	2.06	1.74	2.02
Protein supplements (1.506 cwt)	16.35	17.78	18.03
Salt and minerals (.342 cwt)	2.31	2.29	2.27
Hay (.780 ton)	20.90	18.39	18.36
Pasture	51.50	52.58	46.95
Public grazing	1.18	1.27	1.08
Other--			
Veterinary and medicine	5.53	5.52	5.84
Livestock hauling	2.96	2.97	3.30
Marketing	2.88	2.91	3.86
Custom feed mixing	.02	.07	.06
Fuel, lube, and electricity	7.50	5.63	7.21
Machinery and building repairs	13.21	13.08	13.80
Hired labor (7.056 hr)	32.15	33.42	33.59
Total, variable cash expenses	162.02	160.89	162.25
General farm overhead	5.84	7.38	8.46
Taxes and insurance	15.75	9.45	8.09
Interest	25.57	19.22	22.03
Total, fixed cash expenses	47.16	36.05	38.58
Total, cash expenses	209.18	196.94	200.83
Value of production less cash expenses	36.86	64.79	99.07
Capital replacement	36.76	41.97	43.31
Value of production less cash expenses and capital replacement	.10	22.82	55.76
=====			
Economic (full ownership) costs:			
Variable cash expenses	162.02	160.89	162.25
General farm overhead	5.84	7.38	8.46
Taxes and insurance	15.75	9.45	8.09
Capital replacement	36.76	41.97	43.31
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	5.71	3.98	4.32
Return to other nonland capital ^{3/}	17.18	5.00	6.02
Land ^{4/}	75.04	33.70	30.39
Unpaid labor	15.75	16.24	16.98
Total, economic costs	334.05	278.61	279.82
Residual returns to management and risk	-88.01	-16.88	20.08

^{1/} Quantities per cow in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 70--Cow-calf production costs, all sizes of operation,
Great Plains, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.0450 cwt) <u>1/</u>	75.73	73.52	92.63
Heifer calves (.8201 cwt)	50.24	51.63	64.52
Feeder steers (1.2161 cwt)	71.04	79.76	104.40
Feeder heifers (.8444 cwt)	45.35	50.64	63.57
Cull cows (.6261 cwt)	21.39	22.60	26.89
Total	263.75	278.15	352.01
Cash expenses:			
Feed--			
Grain (1.848 cwt)	8.20	7.18	6.78
Silage (.409 ton)	8.92	8.61	8.73
Protein supplements (2.200 cwt)	23.21	25.34	25.94
Salt and minerals (.350 cwt)	1.93	1.92	1.95
Hay (1.150 ton)	42.63	28.01	28.14
Pasture	33.23	37.09	38.41
Public grazing	.85	.99	.94
Crop residue	.20	.22	.18
Other--			
Veterinary and medicine	6.38	6.90	7.04
Livestock hauling	1.69	1.83	2.07
Marketing	4.91	5.49	5.88
Custom feed mixing	.54	.61	.80
Fuel, lube, and electricity	17.08	13.52	15.59
Machinery and building repairs	20.38	20.90	20.76
Hired labor (3.075 hr)	11.43	11.84	13.47
Total, variable cash expenses	181.58	170.45	176.68
General farm overhead	21.32	27.75	33.03
Taxes and insurance	12.80	13.00	12.49
Interest	55.33	40.74	49.45
Total, fixed cash expenses	89.45	81.49	94.97
Total, cash expenses	271.03	251.94	271.65
Value of production less cash expenses	-7.28	26.21	80.36
Capital replacement	56.88	64.34	65.06
Value of production less cash expenses and capital replacement	-64.16	-38.13	15.30
Economic (full ownership) costs:			
Variable cash expenses	181.58	170.45	176.68
General farm overhead	21.32	27.75	33.03
Taxes and insurance	12.80	13.00	12.49
Capital replacement	56.88	64.34	65.06
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	7.09	4.75	5.47
Return to other nonland capital <u>3/</u>	20.25	22.28	25.92
Land <u>4/</u>	61.97	69.61	72.16
Unpaid labor	69.53	76.38	75.27
Total, economic costs	431.42	448.55	466.08
Residual returns to management and risk	-167.67	-170.41	-114.07

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 71--Cow-calf production costs, all sizes of operation,
North-Central, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.2087 cwt) <u>1/</u>	79.25	84.02	108.17
Heifer calves (.7399 cwt)	40.84	44.03	58.24
Feeder steers (.9571 cwt)	65.88	59.94	77.82
Feeder heifers (.8059 cwt)	49.34	45.04	59.77
Cull cows (.9965 cwt)	34.46	36.71	42.88
Total	269.77	269.74	346.88
Cash expenses:			
Feed--			
Grain (1.357 cwt)	10.42	14.46	13.01
Silage (.445 ton)	9.00	8.63	9.04
Protein supplements (1.023 cwt)	11.40	12.45	13.15
Salt and minerals (.320 cwt)	4.08	4.08	4.12
Hay (1.461 ton)	46.07	41.20	44.87
Pasture	14.36	14.12	13.26
Other--			
Veterinary and medicine	6.14	6.31	6.46
Livestock hauling	2.09	2.03	2.08
Marketing	2.72	2.78	2.89
Custom feed mixing	.13	.13	.13
Fuel, lube, and electricity	15.37	12.31	14.43
Machinery and building repairs	24.12	23.65	23.81
Hired labor (.857 hr)	3.82	3.95	4.14
Total, variable cash expenses	149.72	146.10	151.39
General farm overhead	12.80	28.66	36.84
Taxes and insurance	41.08	26.53	24.76
Interest	32.65	40.94	52.66
Total, fixed cash expenses	86.53	96.13	114.26
Total, cash expenses	236.25	242.23	265.65
Value of production less cash expenses	33.52	27.51	81.23
Capital replacement	73.57	91.34	93.65
Value of production less cash expenses and capital replacement	-40.05	-63.83	-12.42
Economic (full ownership) costs:			
Variable cash expenses	149.72	146.10	151.39
General farm overhead	12.80	28.66	36.84
Taxes and insurance	41.08	26.53	24.76
Capital replacement	73.57	91.34	93.65
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	8.73	5.94	6.76
Return to other nonland capital <u>3/</u>	25.66	26.55	33.04
Land <u>4/</u>	71.33	63.23	65.54
Unpaid labor	102.51	104.55	108.64
Total, economic costs	485.40	492.90	520.62
Residual returns to management and risk	-215.63	-223.16	-173.74

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 72--Cow-calf production costs, all sizes of operation,
South, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.3432 cwt) <u>1/</u>	88.49	93.80	107.19
Heifer calves (.9121 cwt)	48.76	51.62	68.94
Feeder steers (.5469 cwt)	32.11	31.11	40.96
Feeder heifers (.3772 cwt)	20.81	20.70	27.38
Cull cows (.8929 cwt)	32.81	32.14	38.42
Total	222.98	229.37	282.89
Cash expenses:			
Feed--			
Grain (2.426 cwt)	10.82	10.37	7.54
Silage (.214 ton)	3.40	4.00	4.00
Protein supplements (.769 cwt)	13.05	9.76	10.40
Salt and minerals (.272 cwt)	3.62	3.78	3.82
Hay (1.215 ton)	46.83	40.63	44.07
Pasture	49.81	49.73	40.38
Other--			
Veterinary and medicine	5.97	5.95	6.03
Livestock hauling	1.01	1.07	1.08
Marketing	4.29	3.79	3.92
Custom feed mixing	1.07	1.30	1.32
Fuel, lube, and electricity	16.83	12.40	14.88
Machinery and building repairs	26.79	25.91	26.00
Hired labor (3.341 hr)	15.31	14.09	14.84
Total, variable cash expenses	198.80	182.78	178.28
General farm overhead	15.58	27.34	33.47
Taxes and insurance	19.45	14.60	13.45
Interest	29.95	34.55	42.35
Total, fixed cash expenses	64.98	76.49	89.27
Total, cash expenses	263.78	259.27	267.55
Value of production less cash expenses	-40.80	-29.90	15.34
Capital replacement	79.46	99.65	101.70
Value of production less cash expenses and capital replacement	-120.26	-129.55	-86.36
Economic (full ownership) costs:			
Variable cash expenses	198.80	182.78	178.28
General farm overhead	15.58	27.34	33.47
Taxes and insurance	19.45	14.60	13.45
Capital replacement	79.46	99.65	101.70
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	10.70	7.12	7.70
Return to other nonland capital <u>3/</u>	25.91	23.95	29.64
Land <u>4/</u>	75.64	73.32	73.38
Unpaid labor	73.43	73.05	75.10
Total, economic costs	498.97	501.81	512.72
Residual returns to management and risk	-275.99	-272.44	-229.83

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 73--Cow-calf production costs, all sizes of operation,
West, 1985-87

Item	1985	1986	1987
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (1.0469 cwt) ^{1/}	67.93	69.96	83.09
Heifer calves (.7216 cwt)	40.66	42.53	47.39
Feeder steers (1.3706 cwt)	75.36	81.13	93.01
Feeder heifers (.9272 cwt)	47.18	51.42	57.71
Cull cows (.9487 cwt)	31.74	32.17	39.73
Total	262.87	277.21	320.93
Cash expenses:			
Feed--			
Grain (1.732 cwt)	9.03	7.16	5.47
Silage (.091 ton)	2.14	1.79	1.94
Protein supplements (1.020 cwt)	10.74	11.77	12.38
Salt and minerals (.360 cwt)	1.94	1.94	1.96
Hay (1.362 ton)	37.03	32.04	31.16
Pasture	42.60	43.29	43.04
Public grazing	1.57	1.64	1.63
Other--			
Veterinary and medicine	7.01	7.20	7.37
Livestock hauling	2.88	2.80	2.89
Marketing	4.01	4.09	4.24
Fuel, lube, and electricity	13.69	11.21	12.17
Machinery and building repairs	20.14	20.08	20.19
Hired labor (5.047 hr)	22.86	23.76	24.76
Total, variable cash expenses	175.64	168.77	169.20
General farm overhead	16.64	20.65	18.95
Taxes and insurance	13.31	5.50	4.96
Interest	50.39	33.33	30.54
Total, fixed cash expenses	80.34	59.48	54.45
Total, cash expenses	255.98	228.25	223.65
Value of production less cash expenses	6.89	48.96	97.28
Capital replacement	53.86	59.57	61.27
Value of production less cash expenses and capital replacement	-46.97	-10.61	36.01
Economic (full ownership) costs:			
Variable cash expenses	175.64	168.77	169.20
General farm overhead	16.64	20.65	18.95
Taxes and insurance	13.31	5.50	4.96
Capital replacement	53.86	59.57	61.27
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	9.82	6.78	7.45
Return to other nonland capital ^{3/}	19.70	17.65	21.92
Land ^{4/}	35.14	40.06	41.47
Unpaid labor	80.75	82.24	85.36
Total, economic costs	404.86	401.22	410.58
Residual returns to management and risk	-141.99	-124.01	-89.65

^{1/} Quantities per cow in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 74--U.S. feeder pig production costs, all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (80.91 lbs) <u>1/</u>	66.48	77.74	84.63
Cull sows (19.09 lbs)	7.25	8.36	8.19
Total	73.73	86.10	92.82
Cash expenses:			
Feed--			
Grain (4.31.1 lbs)	19.50	15.42	13.41
Protein supplements (117.8 lbs)	14.61	14.80	15.10
Pasture (.035 ac)	.15	.13	.12
Other--			
Veterinary and medicine	1.47	1.50	1.52
Livestock hauling	.20	.19	.20
Marketing	1.51	1.63	1.65
Bedding (34.0 lbs)	.37	.35	.36
Custom feed mixing	1.24	1.20	1.19
Fuel, lube, and electricity	6.69	6.45	6.61
Machinery and building repairs	4.82	4.71	4.73
Hired labor (.448 hr)	2.90	3.26	3.38
Manure credit	-.15	-.14	-.13
Total, variable cash expenses	53.31	49.50	48.14
General farm overhead	3.01	3.32	3.19
Taxes and insurance	1.88	.54	.56
Interest	10.84	7.80	7.66
Total, fixed cash expenses	15.73	11.66	11.41
Total, cash expenses	69.04	61.16	59.55
Value of production less cash expenses	4.69	24.94	33.27
Capital replacement	11.90	13.52	13.94
Value of production less cash expenses and capital replacement	-7.21	11.42	19.33
Economic (full ownership) costs:			
Variable cash expenses	53.31	49.50	48.14
General farm overhead	3.01	3.32	3.19
Taxes and insurance	1.88	.54	.56
Capital replacement	11.90	13.52	13.94
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	1.43	.90	.97
Return to other nonland capital <u>3/</u>	2.74	2.63	3.22
Land <u>4/</u>	.52	.41	.42
Unpaid labor	16.79	17.47	18.13
Total, economic costs	91.58	88.29	88.57
Residual returns to management and risk	-17.85	-2.19	4.25

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 75--U.S. feeder pig production costs, 140 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (80.06 lbs) ^{1/}	67.24	74.55	85.60
Cull sows (19.94 lbs)	7.60	8.73	8.56
Total	74.84	83.28	94.16
Cash expenses:			
Feed--			
Grain (472.6 lbs)	21.60	15.52	13.33
Protein supplements (120.6 lbs)	14.69	15.78	16.67
Pasture (.030 ac)	.55	.52	.48
Other--			
Veterinary and medicine	2.87	2.93	3.01
Marketing	1.51	1.66	1.67
Bedding (32.0 lbs)	.35	.35	.35
Custom feed mixing	5.51	5.54	5.64
Fuel, lube, and electricity	6.15	5.90	6.51
Machinery and building repairs	5.95	5.79	5.82
Hired labor (.661 hr)	.47	.51	.54
Total, variable cash expenses	59.65	54.50	54.02
General farm overhead	8.47	2.97	2.45
Taxes and insurance	1.93	.87	.97
Interest	11.69	5.31	4.37
Total, fixed cash expenses	22.09	9.15	7.79
Total, cash expenses	81.74	63.65	61.81
Value of production less cash expenses	-6.90	19.63	32.35
Capital replacement	13.30	15.10	15.60
Value of production less cash expenses and replacement	-20.20	4.53	16.75
Economic (full ownership) costs:			
Variable cash expenses	59.65	54.50	54.02
General farm overhead	8.47	2.97	2.45
Taxes and insurance	1.93	.87	.97
Capital replacement	13.30	15.10	15.60
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.76	1.19	1.31
Return to other nonland capital ^{3/}	2.83	3.94	4.93
Land ^{4/}	.69	.67	.72
Unpaid labor	32.69	36.29	38.09
Total, economic costs	121.32	115.53	118.09
Residual returns to management and risk	-46.48	-32.25	-23.93

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 76--U.S. feeder pig production costs, 300 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (79.23 lbs) ^{1/}	64.96	75.97	82.70
Cull sows (20.77 lbs)	7.88	9.13	8.93
Total	72.84	85.10	91.63
=====			
Cash expenses:			
Feed--			
Grain (474.3 lbs)	21.28	15.56	13.38
Protein supplements (120.7 lbs)	14.66	15.77	16.68
Pasture (.175 ac)	.32	.28	.26
Other--			
Veterinary and medicine	3.59	3.67	3.78
Livestock hauling	.42	.41	.42
Marketing	1.57	1.71	1.72
Bedding (78.0 lbs)	.82	.81	.82
Custom feed mixing	2.62	2.62	2.70
Fuel, lube, and electricity	10.81	10.53	10.76
Machinery and building repairs	5.97	5.86	5.88
Hired labor (.081 hr)	.35	.37	.37
Manure credit	-.17	-.16	-.15
Total, variable cash expenses	62.24	57.43	56.62
General farm overhead	5.25	2.85	2.40
Taxes and insurance	2.58	.97	.94
Interest	11.76	4.81	4.03
Total, fixed cash expenses	19.59	8.63	7.37
Total, cash expenses	81.83	66.06	63.99
Value of production less cash expenses	-8.99	19.04	27.64
Capital replacement	14.15	16.57	17.09
Value of production less cash expenses and capital replacement	-23.14	2.47	10.55
=====			
Economic (full ownership) costs:			
Variable cash expenses	62.24	57.43	56.62
General farm overhead	5.25	2.85	2.40
Taxes and insurance	2.58	.97	.94
Capital replacement	14.15	16.57	17.09
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.65	1.11	1.20
Return to other nonland capital ^{3/}	3.14	3.86	4.77
Land ^{4/}	1.85	1.53	1.58
Unpaid labor	24.22	24.86	25.91
Total, economic costs	115.08	109.18	110.51
Residual returns to management and risk	-42.24	-24.08	-18.88

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 77--U.S. feeder pig production costs, 650 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (80.40 lbs) ^{1/}	66.04	77.23	84.07
Cull sows (19.60 lbs)	7.44	8.59	8.39
Total	73.48	85.82	92.46
=====			
Cash expenses:			
Feed--			
Grain (440.7 lbs)	19.75	16.40	14.34
Protein supplements (101.8 lbs)	16.04	15.26	15.41
Pasture (.040 ac)	.15	.14	.12
Other--			
Veterinary and medicine	.41	.42	.43
Livestock hauling	.25	.24	.25
Marketing	2.77	3.01	3.05
Bedding (44.0 lbs)	.47	.45	.46
Fuel, lube, and electricity	5.85	5.49	5.69
Machinery and building repairs	4.99	4.88	4.91
Hired labor (.193 hr)	.86	.89	.92
Manure credit	-.18	-.16	-.15
Total, variable cash expenses	51.36	47.02	45.43
General farm overhead	2.47	4.61	4.97
Taxes and insurance	1.72	.54	.56
Interest	9.40	12.50	13.47
Total, fixed cash expenses	13.59	17.65	19.00
Total, cash expenses	64.95	64.67	64.43
Value of production less cash expenses	8.53	21.15	28.03
Capital replacement	11.31	12.91	13.33
Value of production less cash expenses and capital replacement	-2.78	8.24	14.70
=====			
Economic (full ownership) costs:			
Variable cash expenses	51.36	47.02	45.43
General farm overhead	2.47	4.61	4.97
Taxes and insurance	1.72	.54	.56
Capital replacement	11.31	12.91	13.33
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.35	.90	.96
Return to other nonland capital ^{3/}	2.46	3.30	4.07
Land ^{4/}	.48	.40	.42
Unpaid labor	19.09	19.59	20.42
Total, economic costs	90.24	89.27	90.16
Residual returns to management and risk	-16.76	-3.45	2.30

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 78--U.S. feeder pig production costs, 1,600 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (80.42 lbs) ^{1/}	66.03	77.35	84.09
Cull sows (19.58 lbs)	7.43	8.58	8.39
Total	73.46	85.93	92.48
Cash expenses:			
Feed--			
Grain (435.7 lbs)	19.56	15.86	13.83
Protein supplements (121.7 lbs)	15.58	15.08	15.23
Pasture (.013 ac)	.06	.05	.05
Other--			
Veterinary and medicine	.69	.73	.75
Livestock hauling	.20	.20	.21
Marketing	1.21	1.31	1.32
Bedding (18.0 lbs)	.18	.18	.18
Fuel, lube, and electricity	7.28	7.04	7.15
Machinery and building repairs	5.40	5.30	5.33
Hired labor (.163 hr)	.97	1.00	1.02
Manure credit	-.17	-.16	-.15
Total, variable cash expenses	50.96	46.59	44.92
General farm overhead	2.75	3.61	3.27
Taxes and insurance	2.03	.45	.47
Interest	9.55	5.88	5.30
Total, fixed cash expenses	14.33	9.94	9.04
Total, cash expenses	65.29	56.53	53.96
Value of production less cash expenses	8.17	29.40	38.52
Capital replacement	13.35	16.02	16.55
Value of production less cash expenses and capital replacement	-5.18	13.38	21.97
Economic (full ownership) costs:			
Variable cash expenses	50.96	46.59	44.92
General farm overhead	2.75	3.61	3.27
Taxes and insurance	2.03	.45	.47
Capital replacement	13.35	16.02	16.55
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.32	.88	.94
Return to other nonland capital ^{3/}	2.81	2.31	2.82
Land ^{4/}	.16	.14	.14
Unpaid labor	18.05	18.53	19.36
Total, economic costs	91.43	88.53	88.47
Residual returns to management and risk	-17.97	-2.60	4.01

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 79--U.S. feeder pig production costs, 3,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (81.72 lbs) ^{1/}	66.96	78.66	85.63
Cull sows (18.28 lbs)	6.93	7.99	7.84
Total	73.89	86.65	93.47
Cash expenses:			
Feed--			
Grain (411.2 lbs)	18.63	15.11	13.18
Protein supplements (114.8 lbs)	14.22	14.24	14.38
Pasture (.006 ac)	.05	.04	.04
Other--			
Veterinary and medicine	.95	.97	1.00
Livestock hauling	.12	.11	.12
Marketing	1.13	1.23	1.24
Bedding (38.0 lbs)	.43	.39	.40
Fuel, lube, and electricity	5.35	5.19	5.19
Machinery and building repairs	4.14	4.07	4.09
Hired labor (.538 hr)	4.35	4.48	4.64
Manure credit	-.16	-.14	-.14
Total, variable cash expenses	49.21	45.69	44.14
General farm overhead	2.03	2.72	2.49
Taxes and insurance	1.51	.43	.46
Interest	6.38	8.35	7.66
Total, fixed cash expenses	9.92	11.50	10.61
Total, cash expenses	59.13	57.19	54.75
Value of production less cash expenses	14.76	29.46	38.72
Capital replacement	10.76	11.85	12.20
Value of production less cash expenses and capital replacement	4.00	17.61	26.52
Economic (full ownership) costs:			
Variable cash expenses	49.21	45.69	44.14
General farm overhead	2.03	2.72	2.49
Taxes and insurance	1.51	.43	.46
Capital replacement	10.76	11.85	12.20
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.18	.79	.84
Return to other nonland capital ^{3/}	2.26	1.83	2.23
Land ^{4/}	.10	.09	.09
Unpaid labor	12.66	13.01	13.63
Total, economic costs	79.71	76.41	76.08
Residual returns to management and risk	-5.82	10.24	17.39

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 80--U.S. feeder pig production costs, 10,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (83.63 lbs) <u>1/</u>	68.34	80.58	86.94
Cull sows (16.37 lbs)	6.20	7.13	7.02
Total	74.54	87.71	93.96
=====			
Cash expenses:			
Feed--			
Grain (367.9 lbs)	16.87	13.40	11.68
Protein supplements (102.7 lbs)	11.10	12.75	12.86
Other--			
Veterinary and medicine	2.00	2.06	2.10
Livestock hauling	.13	.13	.14
Marketing	.46	.49	.48
Bedding	2.53	2.52	2.56
Fuel, lube, and electricity	4.84	1.08	1.04
Machinery and building repairs	2.51	4.08	4.07
Hired labor (1.469 hr)	11.78	14.27	14.90
Manure credit	-.13	-.12	-.12
Total, variable cash expenses	52.09	50.66	49.71
General farm overhead	2.16	2.28	2.44
Taxes and insurance	1.10	.41	.44
Interest	5.90	7.64	8.20
Total, fixed cash expenses	9.16	10.33	11.08
Total, cash expenses	61.25	60.99	60.79
Value of production less cash expenses	13.29	26.72	33.17
Capital replacement	8.20	8.35	8.58
Value of production less cash expenses and capital replacement	5.09	18.37	24.59
=====			
Economic (full ownership) costs:			
Variable cash expenses	52.09	50.66	49.71
General farm overhead	2.16	2.28	2.44
Taxes and insurance	1.10	.41	.44
Capital replacement	8.20	8.35	8.58
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	1.01	.70	.74
Return to other nonland capital <u>3/</u>	1.77	1.13	1.34
Land <u>4/</u>	.01	0	0
Unpaid labor	.81	.84	.87
Total, economic costs	67.15	64.37	64.12
Residual returns to management and risk	7.39	23.34	29.84

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 81--Feeder pig production costs, all sizes of operation,
North-Central, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (79.57 lbs) ^{1/}	65.70	76.83	83.64
Cull sows (20.43 lbs)	7.77	8.99	8.74
Total	73.47	85.82	92.38
Cash expenses:			
Feed--			
Grain (442.0 lbs)	19.69	15.83	13.74
Protein supplements (120.8 lbs)	14.92	15.20	15.48
Pasture (.043 ac)	.06	.05	.05
Other--			
Veterinary and medicine	1.54	1.55	1.58
Livestock hauling	.24	.24	.24
Marketing	1.43	1.56	1.58
Bedding (38.0 lbs)	.42	.40	.40
Custom feed mixing	1.08	1.04	1.04
Fuel, lube, and electricity	6.86	6.72	6.85
Machinery and building repairs	4.77	4.67	4.69
Hired labor (.332 hr)	2.10	2.19	2.30
Manure credit	-.18	-.17	-.16
Total, variable cash expenses	52.93	49.28	47.79
General farm overhead	3.36	3.37	3.22
Taxes and insurance	1.83	.54	.56
Interest	9.05	7.81	7.63
Total, fixed cash expenses	14.24	11.72	11.41
Total, cash expenses	67.17	61.00	59.20
Value of production less cash expenses	6.30	24.82	33.18
Capital replacement	11.86	13.57	13.99
Value of production less cash expenses and capital replacement	-5.56	11.25	19.19
Economic (full ownership) costs:			
Variable cash expenses	52.93	49.28	47.79
General farm overhead	3.36	3.37	3.22
Taxes and insurance	1.83	.54	.56
Capital replacement	11.86	13.57	13.99
Allocated returns to owned inputs:			
Return to operating capital ^{2/}	1.34	.90	.96
Return to other nonland capital ^{3/}	2.57	2.68	3.28
Land ^{4/}	.48	.39	.40
Unpaid labor	17.26	17.52	18.09
Total, economic costs	91.63	88.25	88.29
Residual returns to management and risk	-18.16	-2.43	4.09

^{1/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{2/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{3/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{4/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 82--Feeder pig production costs, all sizes of operation,
Southeast, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Pigs (86.73 lbs) <u>1/</u>	69.84	81.67	88.91
Cull sows (13.27 lbs)	5.01	5.61	5.58
Total	74.85	87.28	94.49
=====			
Cash expenses:			
Feed--			
Grain (380.1 lbs)	18.66	13.66	11.86
Protein supplements (103.7 lbs)	13.20	13.06	13.31
Pasture (.027 ac)	.56	.50	.46
Other--			
Veterinary and medicine	1.19	1.24	1.26
Livestock hauling	.02	.02	.02
Marketing	1.82	1.97	1.98
Custom feed mixing	.16	.15	.15
Bedding (14.0 lbs)	1.92	1.87	1.87
Fuel, lube, and electricity	5.93	5.26	5.48
Machinery and building repairs	5.03	4.91	4.94
Hired labor (.995 hr)	6.40	6.75	7.30
Total, variable cash expenses	54.89	49.39	48.63
General farm overhead	3.42	3.08	3.07
Taxes and insurance	1.71	.51	.54
Interest	8.59	7.77	7.81
Total, fixed cash expenses	13.72	11.36	11.42
Total, cash expenses	68.61	60.75	60.05
Value of production less cash expenses	6.24	26.53	34.44
Capital replacement	11.76	13.28	13.70
Value of production less cash expenses and capital replacement	-5.52	13.25	20.74
=====			
Economic (full ownership) costs:			
Variable cash expenses	54.89	49.39	48.63
General farm overhead	3.42	3.08	3.07
Taxes and insurance	1.71	.51	.54
Capital replacement	11.76	13.28	13.70
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	1.37	.90	.98
Return to other nonland capital <u>3/</u>	2.55	2.39	2.90
Land <u>4/</u>	.50	.47	.52
Unpaid labor	16.83	17.24	18.32
Total, economic costs	93.03	87.26	88.66
Residual returns to management and risk	-18.18	.02	5.83

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 83--U.S. feeder pig finishing production costs,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt ^{1/}</u>			
Gross value of production:			
Slaughter hogs (100 lbs) ^{2/}	44.61	50.49	51.51
Total	44.61	50.49	51.51
Cash expenses:			
Feeders--			
Feeder pigs (22.5 lbs)	18.76	19.93	22.87
Feed--			
Grain (239.2 lbs)	10.79	8.02	6.90
Protein supplements (45.4 lbs)	5.17	5.80	6.04
Pasture	.01	.01	.01
Other--			
Veterinary and medicine	.46	.47	.48
Livestock hauling	.16	.16	.16
Marketing	.39	.42	.43
Bedding (8.0 lbs)	.10	.09	.09
Custom feed mixing	.07	.07	.06
Fuel, lube, and electricity	1.05	.98	1.11
Machinery and building repairs	1.63	1.58	1.59
Hired labor (.073 hr)	.42	.43	.45
Manure credit	-.15	-.14	-.13
Total, variable cash expenses	38.86	37.82	40.06
General farm overhead	2.44	1.82	1.80
Taxes and insurance	.43	.23	.24
Interest	5.45	4.32	4.31
Total, fixed cash expenses	8.32	6.37	6.35
Total, cash expenses	47.18	44.19	46.41
Value of production less cash expenses	-2.57	6.30	5.10
Capital replacement	3.00	3.98	4.11
Value of production less cash expenses and capital replacement	-5.57	2.32	.99
Economic (full ownership) costs:			
Variable cash expenses	38.86	37.82	40.06
General farm overhead	2.44	1.82	1.80
Taxes and insurance	.43	.23	.24
Capital replacement	3.00	3.98	4.11
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	.53	.37	.42
Return to other nonland capital ^{4/}	.60	.80	.99
Land ^{5/}	.03	.02	.02
Unpaid labor	1.38	1.40	1.46
Total, economic costs	47.27	46.44	49.10
Residual returns to management and risk	-2.66	4.05	2.41

^{1/} Of liveweight sold. ^{2/} Quantities per cwt in parentheses are for the latest year and will vary for earlier years. ^{3/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). ^{5/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 84--U.S. feeder pig finishing production costs,
140 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	45.40	51.38	52.42
Total	45.40	51.38	52.42
=====			
Cash expenses:			
Feeders--			
Feeder pigs (23.1 lbs)	19.48	20.69	23.75
Feed--			
Grain (241.36 lbs)	10.99	7.93	6.81
Protein supplements (44.7 lbs)	5.44	5.85	6.17
Pasture (.005 ac)	.11	.11	.09
Other--			
Veterinary and medicine	.73	.75	.77
Livestock hauling	.08	.08	.09
Marketing	.66	.71	.72
Bedding (18.0 lbs)	.19	.18	.18
Custom feed mixing	.80	.85	.78
Fuel, lube, and electricity	1.39	1.21	1.38
Machinery and building repairs	1.92	1.87	1.89
Hired labor (.037 hr)	.16	.17	.18
Manure credit	-.12	-.11	-.11
Total, variable cash expenses	41.83	40.29	42.70
General farm overhead	5.75	.93	.76
Taxes and insurance	.52	.46	.47
Interest	7.07	1.69	1.37
Total, fixed cash expenses	13.34	3.08	2.60
Total, cash expenses	55.17	43.37	45.30
Value of production less cash expenses	-9.77	8.01	7.12
Capital replacement	3.83	5.07	5.23
Value of production less cash expenses and capital replacement	-13.60	2.94	1.89
=====			
Economic (full ownership) costs:			
Variable cash expenses	41.83	40.29	42.70
General farm overhead	5.75	.93	.76
Taxes and insurance	.52	.46	.47
Capital replacement	3.83	5.07	5.23
Allocated returns to owned inputs:			
Return to operating capital 3/	.77	.47	.56
Return to other nonland capital 4/	.78	1.69	2.13
Land 5/	.14	.14	.14
Unpaid labor	3.07	3.17	3.30
Total, economic costs	56.69	52.22	55.29
Residual returns to management and risk	-11.29	-.84	-2.87

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 85--U.S. feeder pig finishing production costs,
300 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.38	50.23	51.24
Total	44.38	50.23	51.24
Cash expenses:			
Feeders--			
Feeder pigs (22.5 lbs)	18.76	19.93	22.87
Feed--			
Grain (24.18 lbs)	10.85	7.94	6.82
Protein supplements (44.6 lbs)	5.43	5.84	6.17
Pasture (.002 ac)	.03	.02	.02
Other--			
Veterinary and medicine	.49	.50	.51
Livestock hauling	.26	.26	.26
Marketing	.44	.48	.48
Bedding (8.0 lbs)	.09	.08	.08
Fuel, lube, and electricity	1.12	.84	1.05
Machinery and building repairs	1.77	1.60	1.61
Hired labor (.110 hr)	.50	.90	.92
Manure credit	-.14	-.13	-.12
Total, variable cash expenses	39.60	38.26	40.67
General farm overhead	4.09	1.38	1.17
Taxes and insurance	.45	.23	.24
Interest	7.16	2.31	1.95
Total, fixed cash expenses	11.70	3.92	3.36
Total, cash expenses	51.30	42.18	44.03
Value of production less cash expenses	-6.92	8.05	7.21
Capital replacement	3.06	4.04	4.18
Value of production less cash expenses and capital replacement	-9.98	4.01	3.03
Economic (full ownership) costs:			
Variable cash expenses	39.60	38.26	40.67
General farm overhead	4.09	1.38	1.17
Taxes and insurance	.45	.23	.24
Capital replacement	3.06	4.04	4.18
Allocated returns to owned inputs:			
Return to operating capital 3/	.53	.33	.42
Return to other nonland capital 4/	.60	1.45	1.83
Land 5/	.05	.04	.05
Unpaid labor	1.81	1.86	1.94
Total, economic costs	50.19	47.59	50.50
Residual returns to management and risk	-5.81	2.64	.74

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 86--U.S. feeder pig finishing production costs,
650 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.54	47.80	48.65
Total	44.54	47.80	48.65
Cash expenses:			
Feeders--			
Feeder pigs (22.3 lbs)	18.57	19.87	21.67
Feed--			
Grain (242.0 lbs)	10.85	7.95	6.83
Protein supplements (44.7 lbs)	5.36	5.85	6.17
Other--			
Veterinary and medicine	.43	.44	.45
Livestock hauling	.09	.09	.09
Marketing	.39	.42	.43
Bedding (14.0 lbs)	.16	.14	.14
Fuel, lube, and electricity	1.14	1.13	1.28
Machinery and building repairs	1.50	1.45	1.46
Hired labor (.073 hr)	.33	.34	.35
Manure credit	-.14	-.13	-.12
Total, variable cash expenses	38.68	37.55	38.75
General farm overhead	1.96	2.60	2.65
Taxes and insurance	.36	.22	.23
Interest	5.70	6.99	7.12
Total, fixed cash expenses	8.02	9.81	10.00
Total, cash expenses	46.70	47.36	48.75
Value of production less cash expenses	-2.16	.44	-.10
Capital replacement	2.52	3.33	3.43
Value of production less cash expenses and capital replacement	-4.68	-2.89	-3.53
Economic (full ownership) costs:			
Variable cash expenses	38.68	37.55	38.75
General farm overhead	1.96	2.60	2.65
Taxes and insurance	.36	.22	.23
Capital replacement	2.52	3.33	3.43
Allocated returns to owned inputs:			
Return to operating capital 3/	.51	.35	.39
Return to other nonland capital 4/	.49	.71	.89
Land 5/	.01	.01	.01
Unpaid labor	1.48	1.52	1.58
Total, economic costs	46.01	46.29	47.93
Residual returns to management and risk	-1.47	1.51	.72

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 87--U.S. feeder pig finishing production costs,
1,600 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.55	50.85	51.72
Total	44.55	50.85	51.72
=====			
Cash expenses:			
Feeders--			
Feeder pigs (22.4 lbs)	18.58	21.61	23.52
Feed--			
Grain (240.9 lbs)	10.82	7.95	6.83
Protein supplements (44.8 lbs)	5.30	5.84	6.14
Other--			
Veterinary and medicine	.45	.46	.47
Livestock hauling	.20	.19	.20
Marketing	.38	.41	.42
Bedding (6.0 lbs)	.08	.07	.07
Fuel, lube, and electricity	1.11	1.02	1.12
Machinery and building repairs	1.71	1.67	1.68
Hired labor (.082 hr)	.50	.51	.53
Manure credit	-.14	-.13	-.12
Total, variable cash expenses	38.99	39.60	40.86
General farm overhead	1.78	2.12	2.15
Taxes and insurance	.47	.24	.24
Interest	5.79	3.48	3.54
Total, fixed cash expenses	8.04	5.84	5.93
Total, cash expenses	47.03	45.44	46.79
Value of production less cash expenses	-2.48	5.41	4.93
Capital replacement	3.50	4.60	4.76
Value of production less cash expenses and capital replacement	-5.98	.81	.17
=====			
Economic (full ownership) costs:			
Variable cash expenses	38.99	39.60	40.86
General farm overhead	1.78	2.12	2.15
Taxes and insurance	.47	.24	.24
Capital replacement	3.50	4.60	4.76
Allocated returns to owned inputs:			
Return to operating capital 3/	.51	.37	.41
Return to other nonland capital 4/	.68	.66	.81
Land 5/	.01	.01	.01
Unpaid labor	1.02	1.05	1.10
Total, economic costs	46.96	48.65	50.34
Residual returns to management and risk	-2.41	2.20	1.38

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 88--U.S. feeder pig finishing production costs,
3,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.57	50.83	51.68
Total	44.57	50.83	51.68
=====			
Cash expenses:			
Feeder pigs (22.7 lbs)	18.73	21.87	23.72
Feed--			
Grain (235.9 lbs)	10.67	8.07	6.97
Protein supplements (47.6 lbs)	4.87	5.95	5.99
Other--			
Veterinary and medicine	.32	.33	.34
Livestock hauling	.18	.17	.18
Marketing	.37	.41	.41
Bedding (4.0 lbs)	.06	.05	.05
Fuel, lube, and electricity	.89	.81	.90
Machinery and building repairs	1.57	1.53	1.53
Hired labor (.042 hr)	.34	.35	.37
Manure credit	-.13	-.12	-.11
Total, variable cash expenses	37.87	39.42	40.35
General farm overhead	1.54	1.61	1.64
Taxes and insurance	.42	.24	.24
Interest	3.85	4.88	4.96
Total, fixed cash expenses	5.81	6.73	6.84
Total, cash expenses	43.68	46.15	47.19
Value of production less cash expenses	.89	4.68	4.49
Capital replacement	2.80	3.77	3.88
Value of production less cash expenses and capital replacement	-1.91	.91	.61
=====			
Economic (full ownership) costs:			
Variable cash expenses	37.87	39.42	40.35
General farm overhead	1.54	1.61	1.64
Taxes and insurance	.42	.24	.24
Capital replacement	2.80	3.77	3.88
Allocated returns to owned inputs:			
Return to operating capital 3/	.50	.36	.41
Return to other nonland capital 4/	.57	.48	.58
Land 5/	.01	0	0
Unpaid labor	1.04	1.07	1.12
Total, economic costs	44.75	46.95	48.22
Residual returns to management and risk	-.18	3.88	3.46

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 89--U.S. feeder pig finishing production costs,
10,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.59	50.81	51.61
Total	44.59	50.81	51.61
Cash expenses:			
Feeders--			
Feeder pigs (23.0 lbs)	18.95	22.23	24.00
Feed--			
Grain (232.0 lbs)	10.60	8.34	7.22
Protein supplements (44.9 lbs)	4.52	5.39	5.48
Other--			
Veterinary and medicine	.48	.49	.51
Livestock hauling	.14	.14	.14
Marketing	.20	.22	.22
Bedding (2.0 lbs)	.03	.02	.03
Fuel, lube, and electricity	.69	.63	.69
Machinery and building repairs	1.41	1.39	1.39
Hired labor (.077 hr)	.62	.63	.67
Manure credit	-.24	-.22	-.21
Total, variable cash expenses	37.40	39.26	40.14
General farm overhead	1.58	1.31	1.33
Taxes and insurance	.39	.24	.24
Interest	3.53	4.45	4.53
Total, fixed cash expenses	5.50	6.00	6.10
Total, cash expenses	42.90	45.26	46.24
Value of production less cash expenses	1.69	5.55	5.37
Capital replacement	2.60	3.50	3.60
Value of production less cash expenses and capital replacement	-.91	2.05	1.77
Economic (full ownership) costs:			
Variable cash expenses	37.40	39.26	40.14
General farm overhead	1.58	1.31	1.33
Taxes and insurance	.39	.24	.24
Capital replacement	2.60	3.50	3.60
Allocated returns to owned inputs:			
Return to operating capital 3/	.49	.36	.40
Return to other nonland capital 4/	.56	.38	.46
Land 5/	.01	0	0
Unpaid labor	.66	.67	.71
Total, economic costs	43.69	45.72	46.88
Residual returns to management and risk	.90	5.09	4.73

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 90--Feeder pig finishing production costs, all sizes of operation,
North-Central, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.58	50.46	51.48
Total	44.58	50.46	51.48
=====			
Cash expenses:			
Feeders--			
Feeder pigs (22.1 lbs)	18.41	20.30	23.60
Feed--			
Grain (239.6 lbs)	10.65	7.96	6.85
Protein supplements (45.4 lbs)	5.16	5.86	6.11
Other--			
Veterinary and medicine	.47	.48	.49
Livestock hauling	.18	.17	.18
Marketing	.40	.43	.43
Bedding (10.0 lbs)	.11	.10	.10
Fuel, lube, and electricity	1.02	.99	1.12
Machinery and building repairs	1.62	1.58	1.59
Hired labor (.071 hr)	.40	.41	.43
Manure credit	-.18	-.16	-.15
Total, variable cash expenses	38.24	38.12	40.75
General farm overhead	2.44	1.88	1.87
Taxes and insurance	.42	.23	.24
Interest	5.50	4.43	4.43
Total, fixed cash expenses	8.36	6.54	6.54
Total, cash expenses	46.60	44.66	47.29
Value of production less cash expenses	-2.02	5.80	4.19
Capital replacement	3.01	3.95	4.08
Value of production less cash expenses and capital replacement	-5.03	1.85	.11
=====			
Economic (full ownership) costs:			
Variable cash expenses	38.24	38.12	40.75
General farm overhead	2.44	1.88	1.87
Taxes and insurance	.42	.23	.24
Capital replacement	3.01	3.95	4.08
Allocated returns to owned inputs:			
Return to operating capital 3/	.51	.36	.41
Return to other nonland capital 4/	.60	.83	1.03
Land 5/	.01	.01	.01
Unpaid labor	1.37	1.39	1.44
Total, economic costs	46.60	46.77	49.83
Residual returns to management and risk	-2.02	3.69	1.65

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 91--Feeder pig finishing production costs, all sizes of operation,
Southeast, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Slaughter hogs (100 lbs) 2/	44.80	50.71	51.73
Total	44.80	50.71	51.73
Cash expenses:			
Feeder pigs (25.7 lbs)	20.82	22.12	25.38
Feed--			
Grain (236.9 lbs)	11.60	8.36	7.25
Protein supplements (45.5 lbs)	5.21	5.45	5.62
Pasture (.004 ac)	.10	.08	.08
Other--			
Veterinary and medicine	.40	.41	.42
Livestock hauling	.08	.08	.09
Marketing	.35	.38	.38
Bedding (2.0 lbs)	.02	.02	.02
Custom feed mixing	.50	.48	.46
Fuel, lube, and electricity	1.21	.93	1.07
Machinery and building repairs	1.64	1.60	1.61
Hired labor (.087 hrs)	.52	.55	.60
Total, variable cash expenses	42.45	40.46	42.98
General farm overhead	2.45	1.47	1.42
Taxes and insurance	.47	.24	.24
Interest	5.14	3.65	3.52
Total, fixed cash expenses	8.06	5.36	5.18
Total, cash expenses	50.51	45.82	48.16
Value of production less cash expenses	-5.71	4.89	3.57
Capital replacement	3.16	4.17	4.29
Value of production less cash expenses and capital replacement	-8.87	.72	-.72
Economic (full ownership) costs:			
Variable cash expenses	42.45	40.46	42.98
General farm overhead	2.45	1.47	1.42
Taxes and insurance	.47	.24	.24
Capital replacement	3.16	4.17	4.29
Allocated returns to owned inputs:			
Return to operating capital 3/	.68	.42	.45
Return to other nonland capital 4/	.59	.64	.78
Land 5/	.09	.09	.09
Unpaid labor	1.42	1.45	1.54
Total, economic costs	51.31	48.94	51.79
Residual returns to management and risk	-6.51	1.77	-0.06

1/ Of liveweight sold. 2/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector (see pg. 11). 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 92--U.S. farrow-to-finish production costs,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.41 lbs) <u>1/</u>	42.10	48.07	48.90
Cull sows (5.59 lbs)	2.12	2.45	2.40
Total	44.22	50.52	51.30
=====			
Cash expenses:			
Feed--			
Grain (348.5 lbs)	15.69	11.82	10.08
Protein supplements (81.1 lbs)	9.13	10.11	11.14
Pasture (.006 ac)	.03	.03	.03
Other--			
Veterinary and medicine	.53	.54	.56
Livestock hauling	.13	.13	.13
Marketing	.33	.35	.36
Bedding (12.0 lbs)	.15	.15	.14
Fuel, lube, and electricity	1.74	1.68	1.75
Machinery and building repairs	2.38	2.33	2.35
Hired labor (.203 hr)	1.34	1.40	1.46
Manure credit	-.20	-.18	-.17
Total, variable cash expenses	31.25	28.36	27.83
General farm overhead	2.14	1.91	1.89
Taxes and insurance	.83	.26	.26
Interest	5.41	4.10	4.09
Total, fixed cash expenses	8.38	6.27	6.24
Total, cash expenses	39.63	34.63	34.07
Value of production less cash expenses	4.59	15.89	17.23
Capital replacement	5.65	6.69	6.89
Value of production less cash expenses and capital replacement	-1.06	9.20	10.34
=====			
Economic (full ownership) costs:			
Variable cash expenses	31.25	28.36	27.83
General farm overhead	2.14	1.91	1.89
Taxes and insurance	.83	.26	.26
Capital replacement	5.65	6.69	6.89
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.68	.44	.48
Return to other nonland capital <u>3/</u>	1.11	.97	1.18
Land <u>4/</u>	.10	.08	.08
Unpaid labor	4.52	4.58	4.75
Total, economic costs	46.28	43.29	43.36
Residual returns to management and risk	-2.06	7.23	7.94

1/ Quantities per cwt in parentheses, are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 93--U.S. farrow-to-finish production costs,
140 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.71 lbs) <u>1/</u>	42.27	48.26	49.10
Cull sows (5.29 lbs)	2.01	2.31	2.26
Total	44.28	50.57	51.36
=====			
Cash expenses:			
Feed--			
Grain (355.3 lbs)	16.12	12.27	10.48
Protein supplements (80.6 lbs)	9.80	10.53	11.12
Pasture (.029 ac)	.15	.14	.13
Other--			
Veterinary and medicine	.59	.60	.62
Livestock hauling	.16	.15	.16
Marketing	.50	.55	.56
Bedding (18.0 lbs)	.20	.19	.18
Fuel, lube, and electricity	1.97	1.85	2.05
Machinery and building repairs	2.81	2.75	2.77
Hired labor (.113 hr)	.48	.50	.53
Manure credit	-.16	-.15	-.17
Total, variable cash expenses	32.62	29.38	28.43
General farm overhead	5.24	1.78	1.53
Taxes and insurance	.88	.56	.56
Interest	6.89	3.08	2.65
Total, fixed cash expenses	13.01	5.42	4.74
Total, cash expenses	45.63	34.80	33.17
Value of production less cash expenses	-1.35	15.77	18.19
Capital replacement	6.94	8.34	8.62
Value of production less cash expenses and capital replacement	-8.29	7.43	9.57
=====			
Economic (full ownership) costs:			
Variable cash expenses	32.62	29.38	28.43
General farm overhead	5.24	1.78	1.53
Taxes and insurance	.88	.56	.56
Capital replacement	6.94	8.34	8.62
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.81	.53	.57
Return to other nonland capital <u>3/</u>	1.36	1.92	2.41
Land <u>4/</u>	.38	.34	.36
Unpaid labor	9.55	9.74	10.25
Total, economic costs	57.78	52.59	52.73
Residual returns to management and risk	-13.50	-2.02	-1.37

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 94--U.S. farrow-to-finish production costs,
300 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.02 lbs) <u>1/</u>	42.10	48.07	48.90
Cull sows (5.98 lbs)	2.27	2.62	2.56
Total	44.37	50.69	51.46
=====			
Cash expenses:			
Feed--			
Grain (353.6 lbs)	15.85	11.86	10.14
Protein supplements (80.4 lbs)	9.78	10.52	11.10
Pasture (.015 ac)	.07	.06	.06
Other--			
Veterinary and medicine	.67	.69	.71
Livestock hauling	.21	.20	.21
Marketing	.38	.41	.41
Bedding (22.0 lbs)	.24	.24	.23
Fuel, lube, and electricity	1.54	1.54	1.67
Machinery and building repairs	2.53	2.48	2.50
Hired labor (.091 hr)	.41	.42	.44
Manure credit	-.18	-.17	-.16
Total, variable cash expenses	31.50	28.25	27.31
General farm overhead	3.71	1.33	1.17
Taxes and insurance	.76	.30	.29
Interest	7.16	2.42	2.15
Total, fixed cash expenses	11.63	4.05	3.61
Total, cash expenses	43.13	32.30	30.92
Value of production less cash expenses	1.24	18.39	20.54
Capital replacement	6.71	7.84	8.10
Value of production less cash expenses and capital replacement	-5.47	10.55	12.44
=====			
Economic (full ownership) costs:			
Variable cash expenses	31.50	28.25	27.31
General farm overhead	3.71	1.33	1.17
Taxes and insurance	.76	.30	.29
Capital replacement	6.71	7.84	8.10
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.73	.47	.50
Return to other nonland capital <u>3/</u>	1.26	1.29	1.61
Land <u>4/</u>	.20	.17	.18
Unpaid labor	6.69	6.86	7.15
Total, economic costs	51.56	46.51	46.31
Residual returns to management and risk	-7.19	4.18	5.15

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 95--U.S. farrow-to-finish production costs,
650 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.23 lbs) <u>1/</u>	41.98	47.91	48.74
Cull sows (5.77 lbs)	2.19	2.53	2.47
Total	44.17	50.44	51.21
=====			
Cash expenses:			
Feed--			
Grain (353.3 lbs)	15.82	11.86	10.14
Protein supplements (80.7 lbs)	9.66	10.40	11.20
Pasture (.009 ac)	.04	.04	.04
Other--			
Veterinary and medicine	.74	.76	.78
Livestock hauling	.13	.13	.13
Marketing	.37	.40	.41
Bedding (18.0 lbs)	.21	.21	.20
Fuel, lube, and electricity	1.87	1.81	1.93
Machinery and building repairs	2.40	2.35	2.37
Hired labor (.117 hr)	.56	.54	.56
Manure credit	-.19	-.17	-.16
Total, variable cash expenses	31.61	28.33	27.60
General farm overhead	1.63	2.72	2.77
Taxes and insurance	.68	.27	.27
Interest	5.65	5.49	5.56
Total, fixed cash expenses	7.96	8.48	8.60
Total, cash expenses	39.57	36.81	36.20
Value of production less cash expenses	4.60	13.63	15.01
Capital replacement	5.86	6.79	7.01
Value of production less cash expenses and capital replacement	-1.26	6.84	8.00
=====			
Economic (full ownership) costs:			
Variable cash expenses	31.61	28.33	27.60
General farm overhead	1.63	2.72	2.77
Taxes and insurance	.68	.27	.27
Capital replacement	5.86	6.79	7.01
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.69	.44	.47
Return to other nonland capital <u>3/</u>	1.09	.78	.97
Land <u>4/</u>	.13	.11	.11
Unpaid labor	4.28	4.39	4.57
Total, economic costs	45.97	43.83	43.77
Residual returns to management and risk	-1.80	6.61	7.44

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 96--U.S. farrow-to-finish production costs,
1,600 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.40 lbs) <u>1/</u>	42.06	48.01	48.83
Cull sows (5.60 lbs)	2.12	2.46	2.40
Total	44.18	50.47	51.23
=====			
Cash expenses:			
Feed--			
Grain (345.8 lbs)	15.51	12.11	10.40
Protein supplements (85.0 lbs)	9.63	10.08	10.76
Pasture (.001 ac)	.01	0	0
Other--			
Veterinary and medicine	.30	.31	.31
Livestock hauling	.11	.11	.11
Marketing	.35	.38	.38
Bedding (14.0 lbs)	.15	.15	.14
Fuel, lube, and electricity	1.56	1.53	1.59
Machinery and building repairs	2.44	2.40	2.42
Hired labor (.223 hr)	1.35	1.39	1.44
Manure credit	-.18	-.17	-.16
Total, variable cash expenses	31.23	28.29	27.39
General farm overhead	1.65	2.10	2.13
Taxes and insurance	.76	.24	.24
Interest	5.75	3.46	3.51
Total, fixed cash expenses	8.16	5.80	5.88
Total, cash expenses	39.39	34.09	33.27
Value of production less cash expenses	4.79	16.38	17.96
Capital replacement	5.70	6.93	7.16
Value of production less cash expenses and capital replacement	-.91	9.45	10.80
=====			
Economic (full ownership) costs:			
Variable cash expenses	31.23	28.29	27.39
General farm overhead	1.65	2.10	2.13
Taxes and insurance	.76	.24	.24
Capital replacement	5.70	6.93	7.16
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.68	.44	.47
Return to other nonland capital <u>3/</u>	1.17	.99	1.20
Land <u>4/</u>	.02	.01	.01
Unpaid labor	4.22	4.33	4.52
Total, economic costs	45.43	43.33	43.12
Residual returns to management and risk	-1.25	7.14	8.11

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 97--U.S. farrow-to-finish production costs,
3,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.62 lbs) <u>1/</u>	42.17	48.11	48.91
Cull sows (5.38 lbs)	2.04	2.36	2.30
Total	44.21	50.47	51.21
Cash expenses:			
Feed--			
Grain (348.2 lbs)	15.71	14.46	12.66
Protein supplements (79.8 lbs)	8.07	6.77	8.56
Other--			
Veterinary and medicine	.36	.37	.38
Livestock hauling	.07	.07	.07
Marketing	.20	.22	.23
Bedding (4.0 lbs)	.05	.05	.04
Fuel, lube, and electricity	1.69	1.60	1.61
Machinery and building repairs	2.33	2.30	2.32
Hired labor (.220 hr)	1.79	1.86	1.92
Manure credit	-.17	-.16	-.15
Total, variable cash expenses	30.10	27.54	27.64
General farm overhead	1.21	1.60	1.63
Taxes and insurance	.63	.23	.24
Interest	3.82	4.84	4.91
Total, fixed cash expenses	5.66	6.67	6.78
Total, cash expenses	35.76	34.21	34.42
Value of production less cash expenses	8.45	16.26	16.79
Capital replacement	4.84	5.86	6.03
Value of production less cash expenses and capital replacement	3.61	10.40	10.76
Economic (full ownership) costs:			
Variable cash expenses	30.10	27.54	27.64
General farm overhead	1.21	1.60	1.63
Taxes and insurance	.63	.23	.24
Capital replacement	4.84	5.86	6.03
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.64	.42	.46
Return to other nonland capital <u>3/</u>	.98	.73	.87
Land <u>4/</u>	.01	.01	.01
Unpaid labor	3.44	3.58	3.74
Total, economic costs	41.85	39.97	40.62
Residual returns to management and risk	2.36	10.50	10.59

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 98--U.S. farrow-to-finish production costs,
10,000 head operation, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.66 lbs) <u>1/</u>	42.21	48.11	48.86
Cull sows (5.34 lbs)	2.02	2.33	2.29
Total	44.23	50.44	51.15
Cash expenses:			
Feed--			
Grain (336.6 lbs)	15.32	14.02	12.21
Protein supplements (77.6 lbs)	7.51	6.77	8.65
Other--			
Veterinary and medicine	.64	.66	.67
Livestock hauling	.14	.13	.14
Marketing	.20	.22	.23
Bedding (2.0 lbs)	.03	.04	.03
Fuel, lube, and electricity	1.96	1.89	1.87
Machinery and building repairs	1.83	1.80	1.82
Hired labor (.461 hr)	3.73	3.88	4.06
Manure credit	-.33	-.30	-.29
Total, variable cash expenses	31.03	29.11	29.39
General farm overhead	1.28	1.30	1.32
Taxes and insurance	.57	.23	.24
Interest	3.50	4.43	4.50
Total, fixed cash expenses	5.35	5.96	6.06
Total, cash expenses	36.38	35.07	35.45
Value of production less cash expenses	7.85	15.37	15.70
Capital replacement	4.22	4.89	5.05
Value of production less cash expenses and capital replacement	3.63	10.48	10.65
Economic (full ownership) costs:			
Variable cash expenses	31.03	29.11	29.39
General farm overhead	1.28	1.30	1.32
Taxes and insurance	.57	.23	.24
Capital replacement	4.22	4.89	5.05
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.61	.41	.45
Return to other nonland capital <u>3/</u>	.86	.61	.72
Land <u>4/</u>	.01	.01	.01
Unpaid labor	1.04	1.08	1.14
Total, economic costs	39.62	37.64	38.32
Residual returns to management and risk	4.61	12.80	12.83

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 99--Farrow-to-finish production costs, all sizes of operation,
North-Central, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (94.19 lbs) <u>1/</u>	41.98	47.93	48.76
Cull sows (5.81 lbs)	2.20	2.56	2.49
Total	44.18	50.49	51.25
=====			
Cash expenses:			
Feed--			
Grain (348.8 lbs)	15.52	12.42	10.79
Protein supplements (80.8 lbs)	9.07	8.91	10.02
Pasture (.006 ac)	.02	.02	.02
Other--			
Veterinary and medicine	.52	.53	.55
Livestock hauling	.14	.14	.14
Marketing	.32	.35	.36
Bedding (14.0 lbs)	.16	.16	.15
Fuel, lube, and electricity	1.69	1.66	1.73
Machinery and building repairs	2.42	2.38	2.39
Hired labor (.172 hr)	1.13	1.19	1.24
Manure credit	-.23	-.21	-.20
Total, variable cash expenses	30.76	27.55	27.19
General farm overhead	2.14	1.93	1.91
Taxes and insurance	.70	.26	.26
Interest	5.45	4.04	4.02
Total, fixed cash expenses	8.29	6.23	6.19
Total, cash expenses	39.05	33.78	33.38
Value of production less cash expenses	5.13	16.71	17.87
Capital replacement	5.79	6.85	7.04
Value of production less cash expenses and capital replacement	-.66	9.86	10.83
=====			
Economic (full ownership) costs:			
Variable cash expenses	30.76	27.55	27.19
General farm overhead	2.14	1.93	1.91
Taxes and insurance	.70	.26	.26
Capital replacement	5.79	6.85	7.04
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.68	.43	.47
Return to other nonland capital <u>3/</u>	1.13	.99	1.21
Land <u>4/</u>	.09	.07	.07
Unpaid labor	4.60	4.67	4.81
Total, economic costs	45.89	42.75	42.96
Residual returns to management and risk	-1.71	7.74	8.29

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 100--Farrow-to-finish production costs, all sizes of operation,
Southeast, 1985-87

Item	1985	1986	1987
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (95.92 lbs) <u>1/</u>	42.96	49.05	49.90
Cull sows (4.08 lbs)	1.54	1.72	1.71
Total	44.50	50.77	51.61
Cash expenses:			
Feed--			
grain (346.1 lbs)	16.95	14.68	12.23
Protein supplements (83.5 lbs)	9.54	11.49	12.09
Pasture (.014 ac)	.11	.10	.09
Other--			
Veterinary and medicine	.61	.62	.64
Livestock hauling	.06	.06	.06
Marketing	.34	.36	.37
Bedding (4.0 lbs)	.05	.04	.04
Fuel, lube, and electricity	2.09	1.85	1.96
Machinery and building repairs	2.05	2.01	2.01
Hired labor (.438 hr)	2.80	2.94	3.17
Total, variable cash expenses	34.60	34.15	32.66
General farm overhead	2.19	1.74	1.74
Taxes and insurance	.68	.27	.28
Interest	5.10	4.56	4.58
Total, fixed cash expenses	7.97	6.57	6.60
Total, cash expenses	42.57	40.72	39.26
Value of production less cash expenses	1.93	10.05	12.35
Capital replacement	4.70	5.55	5.72
Value of production less cash expenses and capital replacement	-2.77	4.50	6.63
Economic (full ownership) costs:			
Variable cash expenses	34.60	34.15	32.66
General farm overhead	2.19	1.74	1.74
Taxes and insurance	.68	.27	.28
Capital replacement	4.70	5.55	5.72
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	.74	.51	.54
Return to other nonland capital <u>3/</u>	.96	.78	.94
Land <u>4/</u>	.18	.17	.19
Unpaid labor	3.93	4.00	4.30
Total, economic costs	47.98	47.17	46.37
Residual returns to management and risk	-3.48	3.60	5.24

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 101--U.S. sheep production costs, all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars per ewe</u>			
Gross value of production:			
Slaughter lambs (32.6 lbs) <u>1/</u>	21.58	20.86	22.96
Feeder lambs (26.9 lbs)	18.48	18.76	24.02
Cull ewes (29.5 lbs)	6.06	5.97	6.18
Wool (10.0 lbs)	6.84	7.35	7.62
Wool incentive payment	10.99	11.78	10.48
Unshrn lamb payment	2.21	2.40	1.79
Total	66.16	67.12	73.05
=====			
Cash expenses:			
Feed--			
Grain (.733 bu)	2.01	1.60	1.19
Protein supplements (.020 ton)	3.40	3.68	4.00
Salt and minerals (7 lbs)	.40	.40	.40
Hay (.101 ton)	3.90	3.03	2.82
Pasture	3.31	3.47	3.41
Private range	0	0	0
Public grazing	.62	.62	.61
Public grazing	.05	.06	.06
Crop residue	.05	.05	.05
Other--			
Veterinary and medicine	1.05	1.08	1.11
Livestock hauling	1.28	1.25	1.26
Marketing	.29	.29	.30
Ram death loss	.27	.27	.27
Shearing and tagging	1.24	1.29	1.34
Fuel, lube, and electricity	1.53	1.14	1.25
Machinery and building repairs	2.39	2.32	2.35
Hired labor (1.414 hr)	6.49	6.73	6.98
Miscellaneous	1.12	1.15	1.19
Total, variable cash expenses	29.40	28.43	28.59
General farm overhead	3.25	5.03	5.50
Taxes and insurance	1.82	1.76	1.80
Interest	4.80	8.05	8.77
Total, fixed cash expenses	9.87	14.84	16.07
Total, cash expenses	39.27	43.27	44.66
Value of production less cash expenses	26.89	23.85	28.39
Capital replacement	7.61	7.49	7.79
Value of production less cash expenses and capital replacement	19.28	16.36	20.60
=====			
Economic (full ownership) costs:			
Variable cash expenses	29.40	28.43	28.59
General farm overhead	3.25	5.03	5.50
Taxes and insurance	1.82	1.76	1.80
Capital replacement	7.61	7.49	7.79
Allocated returns to owned inputs:			
Return to operating capital <u>2/</u>	1.29	.89	.99
Return to other nonland capital <u>3/</u>	2.72	2.37	2.96
Land <u>4/</u>	5.13	5.84	6.12
Unpaid labor	7.77	8.08	8.39
Total, economic costs	58.99	59.89	62.14
Residual returns to management and risk	7.17	7.23	10.91

1/ Quantities per ewe in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 102--U.S. milk production costs per cow,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,678.68	1,679.70	1,751.92
Cull cows	140.74	136.45	164.23
Total	1,819.42	1,816.15	1,916.15
=====			
Cash expenses:			
Feed--			
Concentrates	438.97	438.72	425.94
By-products	28.99	28.24	26.93
Hay	150.78	143.62	144.82
Silage and haylage	76.90	76.80	74.31
Pasture and other forage	8.20	8.41	8.26
Other--			
Milk hauling and marketing	76.68	74.03	85.09
Artificial insemination	16.47	16.28	16.89
Veterinary and medicine	27.08	27.67	28.25
Livestock hauling	3.92	3.64	3.61
Fuel, lube, and electricity	41.36	29.23	32.92
Machinery and building repairs	53.41	52.18	52.52
Hired labor	123.64	130.42	137.78
DHIA fees	8.18	8.08	8.36
Dairy supplies	27.34	26.22	26.54
Dairy assessment	17.21	48.57	26.66
Total, variable cash expenses	1,099.13	1,112.11	1,098.88
General farm overhead	64.21	77.61	76.16
Taxes and insurance	48.11	46.41	47.61
Interest	189.19	182.75	187.37
Total, fixed cash expenses	301.51	306.77	311.14
Total, cash expenses	1,400.64	1,418.88	1,410.02
Value of production less cash expenses	418.78	397.27	506.13
Capital replacement	220.11	216.08	218.25
Value of production less cash expenses and capital replacement	198.67	181.19	287.88
=====			
Economic (full ownership) costs:			
Variable cash expenses	1,099.13	1,112.11	1,098.88
General farm overhead	64.21	77.61	76.16
Taxes and insurance	48.11	46.41	47.61
Capital replacement	220.11	216.08	218.25
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	11.18	7.99	8.61
Return to other nonland capital <u>2/</u>	72.29	72.43	86.76
Land <u>3/</u>	21.80	17.56	18.27
Unpaid labor	68.28	72.18	76.62
Total, economic costs	1,605.11	1,622.37	1,631.16
Residual returns to management and risk	214.31	193.78	284.99
=====			
Yield (cwt of milk per cow)	132.40	134.91	140.29
=====			

1/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 103--U.S. milk production costs per cwt,
all sizes of operation, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	12.69	12.47	12.52
Cull cows	1.07	1.02	1.18
Total	13.76	13.49	13.70
Cash expenses:			
Feed--			
Concentrates	3.35	3.28	3.07
By-products	.21	.20	.18
Hay	1.10	1.04	1.00
Silage and haylage	.59	.59	.54
Pasture and other forage	.06	.06	.06
Other--			
Milk hauling and marketing	.58	.55	.61
Artificial insemination	.12	.12	.12
Veterinary and medicine	.20	.20	.20
Livestock hauling	.03	.03	.03
Fuel, lube, and electricity	.31	.22	.24
Machinery and building repairs	.41	.39	.38
Hired labor	.92	.95	.97
DHIA fees	.06	.06	.06
Dairy supplies	.21	.19	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	8.28	8.24	7.84
General farm overhead	.49	.59	.55
Taxes and insurance	.38	.36	.35
Interest	1.43	1.36	1.34
Total, fixed cash expenses	2.30	2.31	2.24
Total, cash expenses	10.58	10.55	10.08
Value of production less cash expenses	3.18	2.94	3.62
Capital replacement	1.70	1.64	1.60
Value of production less cash expenses and capital replacement	1.48	1.30	2.02
Economic (full ownership) costs:			
Variable cash expenses	8.28	8.24	7.84
General farm overhead	.49	.59	.55
Taxes and insurance	.38	.36	.35
Capital replacement	1.70	1.64	1.60
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	.08	.06	.06
Return to other nonland capital ^{2/}	.55	.55	.64
Land ^{3/}	.17	.14	.14
Unpaid labor	.53	.55	.56
Total, economic costs	12.18	12.13	11.74
Residual returns to management and risk	1.58	1.36	1.96
Yield (cwt of milk per cow)	132.40	134.91	140.29

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 104--Milk production costs per cow, Appalachia, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,611.74	1,635.65	1,713.96
Cull cows	84.34	80.48	97.22
Total	1,696.08	1,716.13	1,811.18
Cash expenses:			
Feed--			
Concentrates	440.17	441.77	445.67
By-products	22.83	21.87	24.33
Hay	78.60	86.50	83.73
Silage and haylage	83.16	100.07	94.23
Pasture and other forage	9.19	9.38	9.57
Other--			
Milk hauling and marketing	71.84	73.73	75.44
Artificial insemination	10.01	9.80	10.06
Veterinary and medicine	18.93	19.22	19.49
Livestock hauling	2.92	2.71	2.68
Fuel, lube, and electricity	29.67	21.40	24.73
Machinery and building repairs	35.77	35.23	35.43
Hired labor	135.22	138.31	144.33
DHIA fees	5.82	5.70	5.84
Dairy supplies	25.73	24.57	24.79
Dairy assessment	15.55	44.95	24.11
Total, variable cash expenses	985.41	1,035.21	1,024.43
General farm overhead	50.16	59.45	63.06
Taxes and insurance	42.17	43.21	43.69
Interest	166.49	120.24	123.32
Total, fixed cash expenses	258.82	222.90	230.07
Total, cash expenses	1,244.23	1,258.11	1,254.50
Value of production less cash expenses	451.85	458.02	556.68
Capital replacement	179.73	182.58	181.01
Value of production less cash expenses and capital replacement	272.12	275.44	375.67
Economic (full ownership) costs:			
Variable cash expenses	985.41	1,035.21	1,024.43
General farm overhead	50.16	59.45	63.06
Taxes and insurance	42.17	43.21	43.69
Capital replacement	179.73	182.58	181.01
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	9.73	7.20	7.74
Return to other nonland capital ^{2/}	63.86	65.28	77.21
Land ^{3/}	42.81	41.37	39.12
Unpaid labor	30.61	31.40	32.55
Total, economic costs	1,404.48	1,465.70	1,468.81
Residual returns to management and risk	291.60	250.43	342.37
Yield (cwt of milk per cow)	119.59	124.87	126.89

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/}Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/}Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 105--Milk production costs per cwt, Appalachia, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	13.43	13.07	13.47
Cull cows	.71	.65	.77
Total	14.14	13.72	14.24
Cash expenses:			
Feed--			
Concentrates	3.74	3.59	3.55
By-products	.18	.17	.18
Hay	.68	.72	.69
Silage and haylage	.67	.78	.73
Pasture and other forage	.08	.07	.08
Other--			
Milk hauling and marketing	.59	.58	.59
Artificial insemination	.08	.08	.08
Veterinary and medicine	.15	.15	.15
Livestock hauling	.03	.02	.02
Fuel, lube, and electricity	.26	.17	.20
Machinery and building repairs	.31	.29	.28
Hired labor	1.09	1.07	1.10
DHIA fees	.05	.04	.04
Dairy supplies	.21	.19	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	8.25	8.28	8.07
General farm overhead	.42	.48	.50
Taxes and insurance	.35	.34	.34
Interest	1.39	.96	.97
Total, fixed cash expenses	2.16	1.78	1.81
Total, cash expenses	10.41	10.06	9.88
Value of production less cash expenses	3.73	3.66	4.36
Capital replacement	1.54	1.50	1.45
Value of production less cash expenses and capital replacement	2.19	2.16	2.91
Economic (full ownership) costs:			
Variable cash expenses	8.25	8.28	8.07
General farm overhead	.42	.48	.50
Taxes and insurance	.35	.34	.34
Capital replacement	1.54	1.50	1.45
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	.08	.06	.06
Return to other nonland capital ^{2/}	.54	.53	.61
Land ^{3/}	.36	.34	.32
Unpaid labor	.27	.27	.27
Total, economic costs	11.81	11.80	11.62
Residual returns to management and risk	2.33	1.92	2.62
Yield (cwt of milk per cow)	119.59	124.87	126.89

^{1/} Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/} Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 106--Milk production costs per cow, Corn Belt, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,533.42	1,546.16	1,610.45
Cull cows	172.80	161.34	186.28
Total	1,706.22	1,707.50	1,796.73
Cash expenses:			
Feed--			
Concentrates	515.81	490.92	474.59
By-products	19.63	20.77	19.82
Hay	80.90	77.36	76.43
Silage and haylage	47.45	45.57	43.83
Pasture and other forage	9.46	9.65	9.17
Other--			
Milk hauling and marketing	77.83	69.85	78.85
Artificial insemination	14.06	13.89	14.37
Veterinary and medicine	39.75	40.77	41.93
Livestock hauling	6.44	6.01	5.98
Fuel, lube, and electricity	43.31	30.98	35.79
Machinery and building repairs	54.52	53.26	53.24
Hired labor	103.61	108.56	113.21
DHIA fees	6.81	6.73	7.01
Dairy supplies	26.82	25.84	26.34
Dairy assessment	15.91	45.20	24.58
Total, variable cash expenses	1,062.31	1,045.36	1,025.14
General farm overhead	61.96	57.84	60.21
Taxes and insurance	47.52	46.03	45.95
Interest	160.10	212.35	217.15
Total, fixed cash expenses	269.58	316.22	323.31
Total, cash expenses	1,331.89	1,361.58	1,348.45
Value of production less cash expenses	374.33	345.92	448.28
Capital replacement	230.48	227.44	227.86
Value of production less cash expenses and capital replacement	143.85	118.48	220.42
Economic (full ownership) costs:			
Variable cash expenses	1,062.31	1,045.36	1,025.14
General farm overhead	61.96	57.84	60.21
Taxes and insurance	47.52	46.03	45.95
Capital replacement	230.48	227.44	227.86
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	11.21	7.82	8.37
Return to other nonland capital <u>2/</u>	75.19	76.24	90.67
Land <u>3/</u>	23.20	18.81	17.91
Unpaid labor	107.96	113.48	117.43
Total, economic costs	1,619.83	1,593.02	1,593.54
Residual returns to management and risk	86.39	114.48	203.19
Yield (cwt of milk per cow)	122.35	125.55	129.38

1/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 107--Milk production costs per cwt, Corn Belt, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	12.50	12.28	12.41
Cull cows	1.41	1.30	1.46
Total	13.91	13.58	13.87
Cash expenses:			
Feed--			
Concentrates	4.23	3.93	3.69
By-products	.16	.17	.16
Hay	.68	.63	.61
Silage and haylage	.39	.35	.33
Pasture and other forage	.09	.09	.08
Other--			
Milk hauling and marketing	.63	.55	.60
Artificial insemination	.11	.11	.11
Veterinary and medicine	.30	.30	.30
Livestock hauling	.05	.05	.05
Fuel, lube, and electricity	.36	.25	.28
Machinery and building repairs	.45	.43	.42
Hired labor	.87	.88	.90
DHIA fees	.06	.05	.06
Dairy supplies	.21	.20	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	8.72	8.35	7.97
General farm overhead	.51	.46	.46
Taxes and insurance	.40	.37	.37
Interest	1.31	1.69	1.68
Total, fixed cash expenses	2.22	2.52	2.51
Total, cash expenses	10.94	10.87	10.48
Value of production less cash expenses	2.97	2.71	3.39
Capital replacement	1.89	1.83	1.78
Value of production less cash expenses and capital replacement	1.08	.88	1.61
Economic (full ownership) costs:			
Variable cash expenses	8.72	8.35	7.97
General farm overhead	.51	.46	.46
Taxes and insurance	.40	.37	.37
Capital replacement	1.89	1.83	1.78
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	.09	.06	.06
Return to other nonland capital <u>2/</u>	.61	.61	.72
Land <u>3/</u>	.20	.16	.14
Unpaid labor	.87	.89	.89
Total, economic costs	13.29	12.73	12.39
Residual returns to management and risk	.62	.85	1.48
Yield (cwt of milk per cow)	122.35	125.55	129.38

1/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 108--Milk production costs per cow, Northeast, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,761.39	1,768.95	1,846.85
Cull cows	134.80	131.93	158.54
Total	1,896.19	1,900.88	2,005.39
Cash expenses:			
Feed--			
Concentrates	422.41	413.35	422.88
By-products	15.28	15.67	13.98
Hay	86.52	88.24	90.59
Silage and haylage	85.39	84.97	82.68
Pasture and other forage	5.86	6.09	6.23
Other--			
Milk hauling and marketing	95.39	98.78	111.28
Artificial insemination	23.55	23.28	24.21
Veterinary and medicine	31.74	32.55	33.41
Livestock hauling	1.80	1.68	1.66
Fuel, lube, and electricity	48.82	35.26	39.19
Machinery and building repairs	54.89	53.80	54.39
Hired labor	127.38	138.99	146.93
DHIA fees	10.24	10.12	10.49
Dairy supplies	28.98	27.81	28.14
Dairy assessment	17.66	49.96	27.21
Total, variable cash expenses	1,055.91	1,080.55	1,093.27
General farm overhead	74.26	81.88	86.11
Taxes and insurance	55.34	53.43	55.95
Interest	131.76	126.69	129.89
Total, fixed cash expenses	261.36	262.00	271.95
Total, cash expenses	1,317.27	1,342.55	1,365.22
Value of production less	578.92	558.33	640.17
Capital replacement	249.87	246.74	248.33
Value of production less			
cash expenses and capital replacement	329.05	311.59	391.84
Economic (full ownership) costs:			
Variable cash expenses	1,055.91	1,080.55	1,093.27
General farm overhead	74.26	81.88	86.11
Taxes and insurance	55.34	53.43	55.95
Capital replacement	249.87	246.74	248.33
Allocated returns to owned inputs:			
Return to operating capital <u>1</u> /	10.95	7.94	8.79
Return to other nonland capital <u>2</u> /	77.78	78.47	93.10
Land <u>3</u> /	26.12	21.53	26.50
Unpaid labor	87.89	96.20	107.23
Total, economic costs	1,638.12	1,666.74	1,719.28
Residual returns to management and risk	258.07	234.14	286.11
Yield (cwt of milk per cow)	135.85	138.76	143.21

1/Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 109--Milk production costs per cwt, Northeast, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	12.97	12.75	12.90
Cull cows	.99	.95	1.11
Total	13.96	13.70	14.01
Cash expenses:			
Feed--			
Concentrates	3.10	2.97	2.95
By-products	.11	.11	.10
Hay	.64	.64	.64
Silage and haylage	.64	.61	.58
Pasture and other forage	.04	.04	.05
Other--			
Milk hauling and marketing	.70	.71	.77
Artificial insemination	.17	.17	.17
Veterinary and medicine	.23	.23	.23
Livestock hauling	.01	.01	.01
Fuel, lube, and electricity	.36	.25	.27
Machinery and building repairs	.40	.39	.38
Hired labor	.93	.99	1.02
DHIA fees	.08	.07	.07
Dairy supplies	.21	.20	.20
Dairy assessment	.13	.36	.19
Total, variable cash expenses	7.75	7.75	7.63
General farm overhead	.55	.59	.60
Taxes and insurance	.41	.38	.41
Interest	.97	.91	.91
Total, fixed cash expenses	1.93	1.88	1.92
Total, cash expenses	9.68	9.63	9.55
Value of production less cash expenses	4.28	4.07	4.46
Capital replacement	1.84	1.77	1.74
Value of production less cash expenses and capital replacement	2.44	2.30	2.72
Economic (full ownership) costs:			
Variable cash expenses	7.75	7.75	7.63
General farm overhead	.55	.59	.60
Taxes and insurance	.41	.38	.41
Capital replacement	1.84	1.77	1.74
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	.08	.06	.06
Return to other nonland capital ^{2/}	.59	.56	.64
Land ^{3/}	.19	.16	.18
Unpaid labor	.65	.69	.75
Total, economic costs	12.06	11.96	12.01
Residual returns to management and risk	1.90	1.74	2.00
Yield (cwt of milk per cow)	135.85	138.76	143.21

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/}Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/}Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 110--Milk production costs per cow, Pacific, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,912.40	1,894.85	1,944.06
Cull cows	146.23	140.06	173.63
Total	2,058.63	2,034.91	2,117.69
Cash expenses:			
Feed--			
Concentrates	488.79	476.63	460.97
By-products	88.41	80.50	75.47
Hay	410.28	359.29	360.77
Silage and haylage	52.06	47.71	43.03
Pasture and other forage	10.63	10.39	9.29
Other--			
Milk hauling and marketing	77.21	70.68	69.68
Artificial insemination	13.45	13.29	13.81
Veterinary and medicine	26.26	26.74	27.40
Livestock hauling	2.17	2.02	2.00
Fuel, lube, and electricity	32.88	24.90	27.43
Machinery and building repairs	57.95	55.87	56.24
Hired labor	198.87	204.81	215.81
DHIA fees	8.11	8.01	8.32
Dairy supplies	30.02	28.68	29.04
Dairy assessment	20.36	57.73	31.96
Total, variable cash expenses	1,517.45	1,467.25	1,431.22
General farm overhead	45.71	35.46	36.30
Taxes and insurance	28.29	27.61	28.86
Interest	161.53	137.46	139.02
Total, fixed cash expenses	235.53	200.53	204.18
Total, cash expenses	1,752.98	1,667.78	1,635.40
Value of production less cash expenses	305.65	367.13	482.29
Capital replacement	112.78	108.52	109.51
Value of production less cash expenses and capital replacement	192.87	258.61	372.78
Economic (full ownership) costs:			
Variable cash expenses	1,517.45	1,467.25	1,431.22
Taxes and insurance	28.29	27.61	28.86
General farm overhead	45.71	35.46	36.30
Capital replacement	112.78	108.52	109.51
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	14.78	10.08	10.69
Return to other nonland capital ^{2/}	50.95	49.95	61.29
Land ^{3/}	13.53	10.89	9.17
Unpaid labor	25.89	26.50	27.77
Total, economic costs	1,809.38	1,736.26	1,714.81
Residual returns to management and risk	249.25	298.65	402.88
Yield (cwt of milk per cow)	156.65	160.36	168.21

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/}Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/}Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 111--Milk production costs per cwt, Pacific, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	12.21	11.81	11.56
Cull cows	.94	.88	1.04
Total	13.15	12.69	12.60
=====			
Cash expenses:			
Feed--			
Concentrates	3.13	2.97	2.74
By-products	.57	.51	.45
Hay	2.63	2.26	2.15
Silage and haylage	.33	.30	.26
Pasture and other forage	.07	.07	.05
Other--			
Milk hauling and marketing	.49	.44	.42
Artificial insemination	.09	.08	.08
Veterinary and medicine	.17	.17	.16
Livestock hauling	.02	.01	.01
Fuel, lube, and electricity	.22	.16	.16
Machinery and building repairs	.37	.35	.34
Hired labor	1.26	1.27	1.28
DHIA fees	.05	.05	.05
Dairy supplies	.20	.18	.18
Dairy assessment	.13	.36	.19
Total, variable cash expenses	9.73	9.18	8.52
General farm overhead	.29	.22	.22
Taxes and insurance	.17	.17	.16
Interest	1.03	.86	.83
Total, fixed cash expenses	1.49	1.25	1.21
Total, cash expenses	11.22	10.43	9.73
Value of production less cash expenses	1.93	2.26	2.87
Capital replacement	.73	.70	.67
Value of production less cash expenses and capital replacement	1.20	1.56	2.20
=====			
Economic (full ownership) costs:			
Variable cash expenses	9.73	9.18	8.52
General farm overhead	.29	.22	.22
Taxes and insurance	.17	.17	.16
Capital replacement	.73	.70	.67
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	.09	.06	.06
Return to other nonland capital ^{2/}	.32	.31	.36
Land ^{3/}	.09	.07	.06
Unpaid labor	.17	.17	.17
Total, economic costs	11.59	10.88	10.22
Residual returns to management and risk	1.56	1.81	2.38
Yield (cwt of milk per cow)	156.65	160.36	168.21
=====			

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/}Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/}Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 112--Milk production costs per cow, Southeast, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,797.37	1,824.24	1,905.98
Cull cows	122.06	116.90	142.64
Total	1,919.43	1,941.14	2,048.62
Cash expenses:			
Feed--			
Concentrates	727.58	646.25	593.18
By-products	49.42	45.90	50.23
Hay	71.80	78.82	72.27
Silage and haylage	46.34	54.44	45.37
Pasture and other forage	16.33	17.73	15.92
Other--			
Milk hauling and marketing	88.61	97.00	103.07
Artificial insemination	7.58	7.49	7.77
Veterinary and medicine	18.86	19.33	19.80
Livestock hauling	1.89	1.75	1.73
Fuel, lube, and electricity	24.29	18.20	21.06
Machinery and building repairs	25.22	24.50	24.67
Hired labor	236.83	252.97	268.75
DHIA fees	4.02	3.97	4.11
Dairy supplies	23.65	22.91	23.39
Dairy assessment	15.06	42.91	23.21
Total, variable cash expenses	1,357.48	1,334.17	1,274.53
General farm overhead	24.12	52.97	55.62
Taxes and insurance	29.36	30.62	38.57
Interest	134.13	139.07	142.63
Total, fixed cash expenses	187.61	222.66	236.82
Total, cash expenses	1,545.09	1,556.83	1,511.35
Value of production less cash expenses	374.34	384.31	537.27
Capital replacement	105.06	103.98	145.54
Value of production less cash expenses and capital replacement	269.28	280.33	391.73
Economic (full ownership) costs:			
Variable cash expenses	1,357.48	1,334.17	1,274.53
General farm overhead	24.12	52.97	55.62
Taxes and insurance	29.36	30.62	38.57
Capital replacement	105.06	103.98	145.54
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	13.09	9.07	9.41
Return to other nonland capital <u>2/</u>	42.12	42.69	60.12
Land <u>3/</u>	14.16	16.92	12.95
Unpaid labor	9.30	9.75	10.01
Total, economic costs	1,594.69	1,600.17	1,606.75
Residual returns to management and risk	324.74	340.97	441.87
Yield (cwt of milk per cow)	115.85	119.20	122.18

1/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 113--Milk production costs per cwt, Southeast, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	15.53	15.33	15.61
Cull cows	1.06	.98	1.17
Total	16.59	16.31	16.78
Cash expenses:			
Feed--			
Concentrates	6.29	5.43	4.86
By-products	.42	.38	.41
Hay	.62	.65	.59
Silage and haylage	.40	.45	.38
Pasture and other forage	.14	.15	.13
Other--			
Milk hauling and marketing	.76	.81	.85
Artificial insemination	.07	.06	.06
Veterinary and medicine	.16	.16	.16
Livestock hauling	.02	.02	.01
Fuel, lube, and electricity	.21	.15	.17
Machinery and building repairs	.22	.21	.20
Hired labor	2.05	2.13	2.20
DHIA fees	.04	.03	.03
Dairy supplies	.21	.19	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	11.74	11.18	10.43
General farm overhead	.21	.45	.46
Taxes and insurance	.25	.26	.33
Interest	1.16	1.17	1.17
Total, fixed cash expenses	1.62	1.88	1.96
Total, cash expenses	13.36	13.06	12.39
Value of production less cash expenses	3.23	3.25	4.39
Capital replacement	.91	.86	1.19
Value of production less cash expenses and capital replacement	2.32	2.39	3.20
Economic (full ownership) costs:			
Variable cash expenses	11.74	11.18	10.43
General farm overhead	.21	.45	.46
Taxes and insurance	.25	.26	.33
Capital replacement	.91	.86	1.19
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	.11	.08	.08
Return to other nonland capital <u>2/</u>	.36	.37	.48
Land <u>3/</u>	.12	.14	.11
Unpaid labor	.08	.08	.08
Total, economic costs	13.78	13.42	13.16
Residual returns to management and risk	2.81	2.89	3.62
Yield (cwt of milk per cow)	115.85	119.20	122.18

1/Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 114--Milk production costs per cow, Southern Plains, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,714.65	1,719.66	1,788.60
Cull cows	142.79	139.52	167.00
Total	1,857.44	1,859.18	1,955.60
Cash expenses:			
Feed--			
Concentrates	609.67	558.48	518.05
By-products	15.98	17.09	16.54
Hay	245.69	208.46	204.01
Silage and haylage	14.00	15.09	12.06
Pasture and other forage	17.05	17.38	15.71
Other--			
Milk hauling and marketing	96.91	96.10	94.00
Artificial insemination	16.77	16.58	17.20
Veterinary and medicine	9.86	10.11	10.35
Livestock hauling	2.93	2.74	2.73
Fuel, lube, and electricity	28.62	20.64	23.73
Machinery and building repairs	31.29	30.40	30.62
Hired labor	162.06	168.51	174.29
DHIA fees	8.99	8.89	9.22
Dairy supplies	25.37	24.36	24.70
Dairy assessment	16.15	45.52	24.80
Total, variable cash expenses	1,301.34	1,240.35	1,178.01
General farm overhead	61.81	54.74	57.07
Taxes and insurance	37.68	37.70	40.54
Interest	186.12	107.68	110.07
Total, fixed cash expenses	285.61	200.12	207.68
Total, cash expenses	1,586.95	1,440.47	1,385.69
Value of production less cash expenses	270.49	418.71	569.91
Capital replacement	123.14	121.29	126.26
Value of production less cash expenses and capital replacement	147.35	297.42	443.65
Economic (full ownership) costs:			
Variable cash expenses	1,301.34	1,240.35	1,178.01
General farm overhead	61.81	54.74	57.07
Taxes and insurance	37.68	37.70	40.54
Capital replacement	123.14	121.29	126.26
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	13.10	8.84	9.15
Return to other nonland capital <u>2/</u>	48.48	49.17	60.09
Land <u>3/</u>	35.48	28.23	25.44
Unpaid labor	66.78	69.44	71.82
Total, economic costs	1,687.81	1,609.76	1,568.38
Residual returns to management and risk	169.63	249.42	387.22
Yield (cwt of milk per cow)	124.25	126.45	130.55

1/Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 115--Milk production costs per cwt, Southern Plains, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	13.80	13.60	13.70
Cull cows	1.15	1.10	1.28
Total	14.95	14.70	14.98
=====			
Cash expenses:			
Feed--			
Concentrates	4.91	4.42	3.97
By-products	.13	.14	.13
Hay	1.98	1.65	1.56
Silage and haylage	.12	.13	.09
Pasture and other forage	.14	.14	.12
Other--			
Milk hauling and marketing	.78	.76	.72
Artificial insemination	.14	.13	.13
Veterinary and medicine	.08	.08	.08
Livestock hauling	.02	.02	.02
Fuel, lube, and electricity	.23	.17	.19
Machinery and building repairs	.25	.24	.23
Hired labor	1.30	1.33	1.34
DHIA fees	.07	.07	.07
Dairy supplies	.20	.19	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	10.48	9.83	9.03
General farm overhead	.50	.43	.44
Taxes and insurance	.30	.29	.31
Interest	1.50	.85	.84
Total, fixed cash expenses	2.30	1.57	1.59
Total, cash expenses	12.78	11.40	10.62
Value of production less cash expenses	2.17	3.30	4.36
Capital replacement	.99	.96	.96
Value of production less cash expenses and capital replacement	1.18	2.34	3.40
=====			
Economic (full ownership) costs:			
Variable cash expenses	10.48	9.83	9.03
General farm overhead	.50	.43	.44
Taxes and insurance	.30	.29	.31
Capital replacement	.99	.96	.96
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	.11	.07	.07
Return to other nonland capital <u>2/</u>	.39	.39	.46
Land <u>3/</u>	.29	.22	.19
Unpaid labor	.54	.55	.55
Total, economic costs	13.60	12.74	12.01
Residual returns to management and risk	1.35	1.96	2.97
Yield (cwt of milk per cow)	124.25	126.45	130.55

1/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 116--Milk production costs per cow, Upper Midwest, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	1,565.88	1,556.16	1,631.90
Cull cows	146.85	144.27	173.82
Total	1,712.73	1,700.43	1,805.72
Cash expenses:			
Feed--			
Concentrates	365.46	394.83	369.71
By-products	17.85	18.43	16.86
Hay	124.08	124.17	123.62
Silage and haylage	97.25	95.53	95.73
Pasture and other forage	6.74	6.97	7.27
Other--			
Milk hauling and marketing	60.57	54.49	74.21
Artificial insemination	15.46	15.30	15.91
Veterinary and medicine	24.34	24.87	25.34
Livestock hauling	5.92	5.51	5.47
Fuel, lube, and electricity	44.13	29.66	33.67
Machinery and building repairs	58.53	57.35	57.77
Hired labor	79.60	82.93	87.56
DHIA fees	7.91	7.81	8.07
Dairy supplies	26.05	24.97	25.19
Dairy assessment	16.62	46.26	25.60
Total, variable cash expenses	950.51	989.08	971.98
General farm overhead	72.08	106.64	97.72
Taxes and insurance	53.00	49.71	50.87
Interest	246.48	202.60	209.08
Total, fixed cash expenses	371.56	358.95	357.67
Total, cash expenses	1,322.07	1,348.03	1,329.65
Value of production less cash expenses	390.66	352.40	476.07
Capital replacement	268.25	262.43	265.32
Value of production less cash expenses and capital replacement	122.41	89.97	210.75
Economic (full ownership) costs:			
Variable cash expenses	950.51	989.08	971.98
General farm overhead	72.08	106.64	97.72
Taxes and insurance	53.00	49.71	50.87
Capital replacement	268.25	262.43	65.32
Allocated returns to owned inputs:			
Return to operating capital <u>1/</u>	9.80	7.19	7.70
Return to other nonland capital <u>2/</u>	82.97	82.81	99.25
Land <u>3/</u>	18.56	13.47	13.29
Unpaid labor	73.17	76.19	79.50
Total, economic costs	1,528.34	1,587.52	1,585.63
Residual returns to management and risk	184.39	112.91	220.09
Yield (cwt of milk per cow)	127.83	128.50	134.75

1/Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

Table 117--Milk production costs per cwt, Upper Midwest, 1985-87

Item	1985	1986	1987
<u>Dollars</u>			
Gross value of production:			
Milk	12.24	12.10	12.10
Cull cows	1.15	1.13	1.29
Total	13.39	13.23	13.39
Cash expenses:			
Feed--			
Concentrates	2.88	3.09	2.76
By-products	.14	.14	.12
Hay	.99	.97	.94
Silage and haylage	.76	.74	.71
Pasture and other forage	.06	.05	.05
Other--			
Milk hauling and marketing	.48	.43	.55
Artificial insemination	.12	.12	.12
Veterinary and medicine	.19	.20	.19
Livestock hauling	.05	.04	.04
Fuel, lube, and electricity	.34	.24	.25
Machinery and building repairs	.46	.45	.43
Hired labor	.62	.65	.65
DHIA fees	.06	.06	.06
Dairy supplies	.21	.20	.19
Dairy assessment	.13	.36	.19
Total, variable cash expenses	7.48	7.74	7.25
General farm overhead	.56	.83	.73
Taxes and insurance	.41	.39	.39
Interest	1.93	1.58	1.55
Total, fixed cash expenses	2.90	2.80	2.67
Total, cash expenses	10.38	10.54	9.92
Value of production less cash expenses	3.01	2.69	3.47
Capital replacement	2.10	2.06	1.97
Value of production less cash expenses and capital replacement	.91	.63	1.50
Economic (full ownership) costs:			
Variable cash expenses	7.48	7.74	7.25
General farm overhead	.56	.83	.73
Taxes and insurance	.41	.39	.39
Capital replacement	2.10	2.06	1.97
Allocated returns to owned inputs:			
Return to operating capital ^{1/}	.08	.06	.06
Return to other nonland capital ^{2/}	.65	.65	.73
Land ^{3/}	.15	.11	.10
Unpaid labor	.58	.60	.60
Total, economic costs	12.01	12.44	11.83
Residual returns to management and risk	1.38	.79	1.56
Yield (cwt of milk per cow)	127.83	128.50	134.75

^{1/}Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate (see pg. 11). ^{2/}Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector (see pg. 11). ^{3/}Value of land multiplied by longrun real rate of return to production assets in farm sector (see pg. 11).

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